



DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS-R2-ES-2012-0082]

[4500030114]

RIN 1018-AY20

Endangered and Threatened Wildlife and Plants; Proposed Revision of Critical Habitat for the Comal Springs Dryopid Beetle, Comal Springs Riffle Beetle, and Peck's Cave Amphipod

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), propose to revise

designation of critical habitat for the Comal Springs dryopid beetle (*Stygoparnus comalensis*), Comal Springs riffle beetle (*Heterelmis comalensis*), and Peck's cave amphipod (*Stygobromus pecki*), under the Endangered Species Act of 1973, as amended (Act). In total, approximately 169 acres (68 hectares) are being proposed for revised critical habitat. The proposed revision of critical habitat is located in Comal and Hays Counties, Texas.

DATES: We will accept comments received or postmarked on or before [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

Comments submitted electronically using the Federal eRulemaking Portal (see **ADDRESSES** section, below) must be received by 11:59 p.m. Eastern Time on the closing date. We must receive requests for public hearings, in writing, at the address shown in **FOR FURTHER INFORMATION CONTACT** by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may submit comments by one of the following methods:

(1) *Electronically:* Go to the Federal eRulemaking Portal:

<http://www.regulations.gov>. In the Search box, enter FWS-2-ES-2012-0082, which is the docket number for this rulemaking. You may submit a comment by clicking on "Comment Now!."

(2) *By hard copy:* Submit by U.S. mail or hand-delivery to: Public Comments Processing, Attn: **FWS-R2-ES-2012-0082**; Division of Policy and Directives

Management; U.S. Fish and Wildlife Service; 4401 N. Fairfax Drive, MS 2042-PDM; Arlington, VA 22203.

We request that you send comments **only** by the methods described above. We will post all comments on <http://www.regulations.gov>. This generally means that we will post any personal information you provide us (see **Information Requested** section below for more information).

The coordinates or plot points or both from which the maps are generated are included in the administrative record for this critical habitat designation and are available at (<http://www.fws.gov/southwest/es/austintexas/>), www.regulations.gov at Docket No. **FWS-R2-ES-2012-0082**, and at the Austin Ecological Services Field Office (see FOR FURTHER INFORMATION CONTACT). Any additional tools or supporting information that we may develop for this critical habitat designation will also be available at the Fish and Wildlife Service website and field office set out above, and may also be included in the preamble and/or at www.regulations.gov.

FOR FURTHER INFORMATION CONTACT: Adam Zerrenner, Field Supervisor, U.S. Fish and Wildlife Service, Austin Ecological Services Field Office, 10711 Burnet Road, Suite 200, Austin, TX 78758; telephone at 512-490-0057 extension 248; or by facsimile at 512-490-0974. If you use a telecommunications device for the deaf (TDD), call the Federal Information Relay Service (FIRS) at 800-877-8339.

SUPPLEMENTARY INFORMATION:

Executive Summary

Why we need to publish a rule. Under the Endangered Species Act, any species that is determined to be threatened or endangered requires critical habitat to be designated, to the maximum extent prudent and determinable. Designations and revisions of critical habitat can only be completed by issuing a rule. This is a proposed rule to revise critical habitat for the Comal Springs dryopid beetle, Comal Springs riffle beetle, and Peck's cave amphipod. With this rule, we are proposing to revise critical habitat for the three endangered invertebrates as follows:

- Comal Springs dryopid beetle: 39.4 acres (ac) (15.56 hectares (ha)) of surface and 139 ac (56 ha) of subsurface critical habitat. The original designation was surface critical habitat of 39.5 ac (16.0 ha) without subsurface;
- Comal Springs riffle beetle: 54 ac (22 ha) of surface critical habitat only. The original designation was surface critical habitat of 30.3 ac (12.3 ha) ; and
- Peck's cave amphipod: 38.4 ac (15.16 ha) surface and 138 ac (56 ha) of subsurface critical habitat. The original designation was surface critical habitat of 38.5 ac (15.6 ha) without subsurface.
- Areas that meet the definition of critical habitat for the Comal Springs dryopid

beetle, Comal Springs riffle beetle, and Peck's cave amphipod species that are covered by the Edwards Aquifer Recovery Implementation Program Habitat Conservation Plan are being considered for exclusion from the final critical habitat designation.

The proposed critical habitat revision is located in Comal and Hays Counties, Texas.

The basis for our action.

Previously, we designated critical habitat for these three invertebrates on July 17, 2007 (72 FR 39248). However, on January 14, 2009, the Center for Biological Diversity, Citizens Alliance for Smart Expansion, and Aquifer Guardians in Urban Areas (*CBD, et al. v. Kempthorne*, No. 1:09-cv-00031-LY (W.D. Tex.)) filed suit in Federal Court (Western District of Texas) alleging that the Service failed to use the best available science in the critical habitat designation. On December 18, 2009, the parties filed a settlement agreement where we agreed to submit a revised proposed critical habitat determination for publication in the **Federal Register** by October 17, 2012, and a final revised determination by October 13, 2013. This proposed rule is published in accordance with that agreement.

We are preparing an economic analysis. To ensure that we consider the economic impacts, we are preparing a new economic analysis of the proposed designation. We will publish an announcement and seek public comments on the draft

economic analysis when it is completed.

We will seek peer review. We are seeking comments from independent specialists to ensure that our critical habitat designation is based on scientifically sound data, assumptions, and analyses. We have invited these peer reviewers to comment on our specific assumptions in this revision of the critical habitat designations. Because we will consider all comments and information received during the comment period, our final determinations may differ from this proposal.

Information Requested

We intend that any final action resulting from this proposed rule will be based on the best scientific and commercial data available and be as accurate and as effective as possible. Therefore, we request comments or information from other concerned government agencies, the scientific community, industry, or any other interested party concerning this proposed rule. We particularly seek comments concerning:

(1) The reasons why we should or should not designate habitat as “critical habitat” under section 4 of the Act (16 U.S.C. 1531 *et seq.*) including whether there are threats to the species from human activity, the degree of which can be expected to increase due to the designation, and whether that increase in threat outweighs the benefit of designation such that the designation of critical habitat may not be prudent.

(2) Specific information on:

(a) The amount and distribution of the three invertebrates' habitats;

(b) What areas, that were occupied at the time of listing (or are currently occupied) and that contain features essential to the conservation of the species, should be included in the designation and why;

(c) Special management considerations or protection that may be needed in critical habitat areas we are proposing, including managing for the potential effects of climate change; and

(d) What areas not occupied at the time of listing are essential for the conservation of the species and why.

(3) Land use designations and current or planned activities in the subject areas and their possible impacts on proposed critical habitat.

(4) Information on the projected and reasonably likely impacts of climate change on the Comal Springs dryopid beetle, Comal Springs riffle beetle, Peck's cave amphipod, or their proposed critical habitat revision.

(5) Any probable economic, national security, or other relevant impacts of designating any area that may be included in the final designation; in particular, any impacts on small entities or families, and the benefits of including or excluding areas that

exhibit these impacts.

(6) Any data documenting the extent of subsurface areas used by any of the species for breeding, feeding, or sheltering.

(7) Whether any specific areas we are proposing for critical habitat designation should be considered for exclusion under section 4(b)(2) of the Act, and whether the benefits of potentially excluding any specific area outweigh the benefits of including that area under section 4(b)(2) of the Act, in particular for those areas that may benefit from the proposed Edwards Aquifer Recovery Implementation Program Habitat Conservation Plan (HCP). Copies of the draft HCP are available from the Austin Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

(8) Whether we could improve or modify our approach to designating critical habitat in any way to provide for greater public participation and understanding, or to better accommodate public concerns and comments.

You may submit your comments and materials concerning this proposed rule by one of the methods listed in **ADDRESSES**. We request that you send comments **only** by the methods described in the **ADDRESSES** section.

We will post your entire comment—including your personal identifying

information—on <http://www.regulations.gov>. You may request at the top of your document that we withhold personal information such as your street address, phone number, or e-mail address from public review; however, we cannot guarantee that we will be able to do so.

Comments and materials we receive, as well as supporting documentation we used in preparing this proposed rule, will be available for public inspection on <http://www.regulations.gov>, or by appointment, during normal business hours, at the U.S. Fish and Wildlife Service, Austin Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Previous Federal Actions

The final rule to list Comal Springs dryopid beetle, Comal Springs riffle beetle, and Peck's cave amphipod as endangered species was published in the **Federal Register** on December 18, 1997 (62 FR 66295). Critical habitat was not designated at the time of listing due to the determination by the Service that designation for the three invertebrate species would not provide benefits to the species beyond listing and any evaluation of activities required under section 7 of the Act. The lack of designated critical habitat for these species was subsequently challenged by the Center for Biological Diversity in the U.S. District Court for the District of Columbia. As part of a stipulated settlement agreement between the plaintiff and the Service, the Service subsequently proposed

critical habitat on July 17, 2006 (71 FR 40588), and designated critical habitat for the species on July 17, 2007 (72 FR 39248).

On August 28, 2007, the Center for Biological Diversity, Citizens Alliance for Smart Expansion, and Aquifer Guardians in Urban Areas provided us with a 60-day notice of intent to sue on the final critical habitat rule. On January 14, 2009, the plaintiffs filed suit in Federal Court (Western District of Texas) alleging that the Service failed to use the best available science. On December 18, 2009, the parties filed a settlement agreement where we agreed to submit a revised proposed critical habitat determination for publication in the **Federal Register** by October 17, 2012, and a final revised determination by October 13, 2013. This proposed rule is published in accordance with that agreement.

Background

For more information on these species, refer to the final rule listing the Comal Springs dryopid beetle, Comal Springs riffle beetle, and Peck's cave amphipod that published in the **Federal Register** on December 18, 1997 (62 FR 66295) and the San Marcos & Comal Springs & Associated Aquatic Ecosystems (Revised) Recovery Plan (Service 1996), available online at http://ecos.fws.gov/docs/recovery_plan/960214.pdf.

Species Information

The Comal Springs dryopid beetle, Comal Springs riffle beetle, and Peck's cave amphipod are all freshwater invertebrates (Gibson *et al.* 2008, p. 74). The Comal Springs dryopid beetle has been found in two spring systems (Comal Springs and Fern Bank Springs) that are located in Comal and Hays Counties, Texas, respectively (Barr and Spangler 1993, pp. 3, 41). The Comal Springs dryopid beetle is a subterranean insect with vestigial (poorly developed, nonfunctional) eyes (Barr and Spangler 1992, pp. 40–41). The Comal Springs dryopid beetle larvae are thought to inhabit moist areas associated with roots, debris, and soil lining the ceiling of subterranean cavities and spring orifices (Barr and Spangler 1992, p. 41; Gibson, R. 2012d, pers. comm.).

The Comal Springs riffle beetle is an aquatic insect that is primarily surface-dwelling associated with Comal Springs in Comal County and San Marcos Springs in Hays County (Gibson *et al.* 2008, pp. 74, 76).

The Peck's cave amphipod is an eyeless, subterranean (below ground) arthropod that has been found in Comal Springs and Hueco Springs (also spelled Waco Springs), both located in Comal County (Barr 1993, pp. 3, 37, 52). The Peck's cave amphipod is likely an omnivore capable of consuming detritus and microorganisms from decaying roots near spring outlets as well as acting as a scavenger or predator inside the aquifer (Gibson, R. 2005, pers. comm.).

Potential food sources for all three invertebrate species include detritus (decomposed materials), leaf litter, and decaying roots. Roots not only provide a food source to these invertebrates, but penetrate underground into water pools where they can also serve as habitat for the amphipod and dryopid beetle. These invertebrate species are typically found on roots where they feed on fungus and bacteria (Gibson *et al.* 2008, p. 77, Gibson, R. 2012d pers. comm.).

Habitat Information

The four spring systems—Comal, San Marcos, Hueco, and Fern Bank—where these three invertebrate species occur are produced by discharge of aquifer water along the Balcones Fault Zone at the edge of the Edwards Plateau in central Texas (Gibson *et al.* 2008, p. 74). These spring systems vary in size. Comal Springs and San Marcos Springs are the two largest spring systems in Texas with respective mean annual flows of 284 and 170 cubic feet per second (8 and 5 cubic meters per second) (Fahlquist and Slattery 1997, p. 1; Slattery and Fahlquist 1997, p. 1). Fern Bank Springs and Hueco Springs have considerably smaller flows, and each consists of one main spring with several satellite springs or seep areas.

The source of water flows for Comal Springs and San Marcos Springs is the San Antonio segment of the Edwards Aquifer (Lindgren *et al.* 2004, pp. 4–6; Lindgren *et al.* 2009, p. 2). This aquifer is characterized by highly varied, below ground spaces that

have been hollowed out within limestone bedrock through dissolution by rainwater. Hueco Springs is recharged from the local watershed basin and possibly by the San Antonio segment of the Edwards Aquifer (Guyton and Associates 1979, p. 2). The source of water for Fern Bank Springs has not been determined, but it is speculated it could be drainage from the nearby Edwards Aquifer Recharge Zone, water lost from the Blanco River, or a combination of these possible sources (Veni, G. 2006, pers. comm.).

The four spring systems proposed for critical habitat revision are characterized by high water quality and relatively constant water flows. Although flows from San Marcos Springs can vary according to fluctuations in the source aquifer, records indicate that this spring system has never ceased flowing since 1894 (Puente 1976, p. 27). Comal Springs has a flow record nearly comparable; however, Comal Springs ceased flowing from June 13 to November 3, 1956, during a severe drought in conjunction with water being pumped from the aquifer (U.S. Army Corps of Engineers 1965, p. 59). Unlike the Comal and San Marcos Springs, the Hueco Springs has gone dry a number of times in the past during drought periods (Puente 1976, p. 27; Guyton and Associates 1979, p. 46). Although flow records are unavailable for Fern Bank Springs, the spring system may be perennial (Barr 1993, p. 39).

Each of the four spring systems and related subterranean aquifers typically provide adequate resources to sustain life cycle functions for resident populations of the Comal Springs dryopid beetle, Comal springs riffle beetle, and the Peck's cave amphipod

except during extreme drought periods or from excessive groundwater pumping.

New Genetic Information Since the 2007 Final Critical Habitat Rule

A recent analysis of known Peck's cave amphipod populations examined genetic variation to assess population structure within the species (Nice and Ethridge 2011, p. 2). This study estimated the degree to which the sampling localities of this species were differentiated or isolated from each other. Nice and Ethridge (2011, pp. 7–8) found that genetic sequences showed high levels of differentiation within and among Peck's cave amphipod localities. They also found sequences from two distinct haplotypes (a genetic segment or group of genes inherited from a single parent) with deep divergence (Nice and Ethridge 2011, pp. 7–8). The two haplotypes were not geographically separated and often co-occurred in similar proportions. This observation suggests that what appears to be a single species of Peck's cave amphipod might instead be two similar-looking species living together that do not interbreed. Another explanation could be that a common ancestor separated some time ago causing divergence that resulted in two core subterranean populations isolated by hydrogeology. Then over time, these populations reconnected at Comal Springs via a downstream dispersal mechanism while dispersal upstream into the aquifer (mixing of core populations) might be hindered. For example, predation and competition with the established community and hydrogeological features such as underground waterfalls, tight interstitial spaces, and high flow conduits might allow immature individuals to pass downstream but block upstream dispersal (Gibson

2012a, pers. comm.). Despite this new information, a formal, peer-reviewed description of the two possible species has not been published. Therefore, we do not recognize a separation of the Peck's cave amphipod into two species because this split has not been recognized by the scientific community.

Critical Habitat

Background

Critical habitat is defined in section 3 of the Act as:

- (1) The specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the Act, on which are found those physical or biological features
 - (a) Essential to the conservation of the species and
 - (b) Which may require special management considerations or protection; and
- (2) Specific areas outside the geographical area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

Conservation, as defined under section 3 of the Act, means to use and the use of all methods and procedures that are necessary to bring an endangered or threatened species to the point at which the measures provided pursuant to the Act are no longer necessary. Such methods and procedures include, but are not limited to, all activities

associated with scientific resources management such as research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping, and transplantation, and, in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulated taking.

Critical habitat receives protection under section 7 of the Act through the requirement that Federal agencies ensure, in consultation with the Service, that any action they authorize, fund, or carry out is not likely to result in the destruction or adverse modification of critical habitat. The designation of critical habitat does not affect land ownership or establish a refuge, wilderness, reserve, preserve, or other conservation area. Such designation does not allow the government or public to access private lands. Such designation does not require implementation of restoration, recovery, or enhancement measures by non-Federal landowners. Where a landowner requests Federal agency funding or authorization for an action that may affect a listed species or critical habitat, the consultation requirements of section 7(a)(2) of the Act would apply, but even in the event of a destruction or adverse modification finding, the obligation of the Federal action agency and the landowner is not to restore or recover the species, but to implement reasonable and prudent alternatives to avoid destruction or adverse modification of critical habitat.

Under the first prong of the Act's definition of critical habitat, areas within the geographical area occupied by the species at the time it was listed are included in a

critical habitat designation if they contain physical or biological features (1) which are essential to the conservation of the species and (2) which may require special management considerations or protection. For these areas, critical habitat designations identify, to the extent known using the best scientific and commercial data available, those physical or biological features that are essential to the conservation of the species (such as space, food, cover, and protected habitat). In identifying those physical and biological features within an area, we focus on the principal biological or physical constituent elements (primary constituent elements such as roost sites, nesting grounds, seasonal wetlands, water quality, tide, soil type) that are essential to the conservation of the species. Primary constituent elements are the specific elements of physical or biological features that provide for a species' life-history processes and are essential to the conservation of the species.

Under the second prong of the Act's definition of critical habitat, we can designate critical habitat in areas outside the geographical area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. For example, an area currently occupied by the species but that was not occupied at the time of listing may be essential to the conservation of the species and may be included in the critical habitat designation. We designate critical habitat in areas outside the geographical area occupied by a species only when a designation limited to its range would be inadequate to ensure the conservation of the species.

Section 4 of the Act requires that we designate critical habitat on the basis of the best scientific data available. Further, our Policy on Information Standards under the Endangered Species Act (published in the **Federal Register** on July 1, 1994 (59 FR 34271)), the Information Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Pub. L. 106-554; H.R. 5658)), and our associated Information Quality Guidelines, provide criteria, establish procedures, and provide guidance to ensure that our decisions are based on the best scientific data available. They require our biologists, to the extent consistent with the Act and with the use of the best scientific data available, to use primary and original sources of information as the basis for recommendations to designate critical habitat.

When we are determining which areas should be designated as critical habitat, our primary source of information is generally the information developed during the listing process for the species. Additional information sources may include the recovery plan for the species, articles in peer-reviewed journals, conservation plans developed by States and counties, scientific status surveys and studies, biological assessments, other unpublished materials, or experts' opinions or personal knowledge.

Habitat is dynamic, and species may move from one area to another over time. We recognize that critical habitat designated at a particular point in time may not include all of the habitat areas that we may later determine are necessary for the recovery of the species. For these reasons, a critical habitat designation does not signal that habitat

outside the designated area is unimportant or may not be needed for recovery of the species. Areas that are important to the conservation of the species, both inside and outside the critical habitat designation, will continue to be subject to: (1) conservation actions implemented under section 7(a)(1) of the Act, (2) regulatory protections afforded by the requirement in section 7(a)(2) of the Act for Federal agencies to ensure their actions are not likely to jeopardize the continued existence of any endangered or threatened species, and (3) the prohibitions of section 9 of the Act if actions occurring in these areas may affect the species. Federally funded or permitted projects affecting listed species outside their designated critical habitat areas may still result in jeopardy findings in some cases. These protections and conservation tools will continue to contribute to recovery of this species. Similarly, critical habitat designations made on the basis of the best available information at the time of designation will not control the direction and substance of future recovery plans, habitat conservation plans (HCPs), or other species conservation planning efforts if new information available at the time of these planning efforts calls for a different outcome.

Prudency Determination

Section 4(a)(3) of the Act, as amended, and implementing regulations (50 CFR 424.12), require that, to the maximum extent prudent and determinable, the Secretary shall designate critical habitat at the time the species is determined to be an endangered

or threatened species. Our regulations (50 CFR 424.12(a)(1)) state that the designation of critical habitat is not prudent when one or both of the following situations exist:

- (1) The species is threatened by taking or other human activity, and identification of critical habitat can be expected to increase the degree of threat to the species, or
- (2) such designation of critical habitat would not be beneficial to the species.

There is currently no imminent threat of take attributed to collection or vandalism for any of these species, and identification and mapping of critical habitat is not expected to initiate any such threat. In the absence of finding that the designation of critical habitat would increase threats to a species, if there are any benefits to a critical habitat designation, then a prudent finding is warranted. Here, the potential benefits of designation include: (1) Triggering consultation under section 7 of the Act, in new areas for actions in which there may be a Federal nexus where it would not otherwise occur because, for example, it is or has become unoccupied or the occupancy is in question; (2) focusing conservation activities on the most essential features and areas; (3) providing educational benefits to State or county governments or private entities; and (4) preventing people from causing inadvertent harm to the species. Therefore, because we have determined that the designation of critical habitat will not likely increase the degree of threat to the species and may provide some measure of benefit, we find that designation of critical habitat is prudent for the Comal Springs dryopid beetle, Comal Springs riffle beetle, and Peck's cave amphipod, and reaffirmed our previous determination concerning the prudence of designating critical habitat for these species.

Critical Habitat Determinability

Having reaffirmed that designation is prudent, under section 4(a)(3) of the Act we then evaluate whether critical habitat for the eight species is determinable. Our regulations at 50 CFR 424.12(a)(2) state that critical habitat is not determinable when one or both of the following situations exist:

- (i) Information sufficient to perform required analyses of the impacts of the designation is lacking, or
- (ii) The biological needs of the species are not sufficiently well known to permit identification of an area as critical habitat.

When critical habitat is not determinable, the Act allows the Service an additional year to publish a critical habitat designation (16 U.S.C. 1533(b)(6)(C)(ii)).

We reviewed the available information pertaining to the biological needs of the species and habitat characteristics where these species are located. This and other information represent the best scientific data available and led us to conclude that the designation of critical habitat is determinable for the Comal Springs dryopid beetle, Comal Springs riffle beetle, and Peck's cave amphipod.

Physical or Biological Features

In accordance with section 3(5)(A)(i) and 4(b)(1)(A) of the Act and regulations at 50 CFR 424.12, in determining which areas within the geographical area occupied by the species at the time of listing to designate as critical habitat, we consider the physical or biological features that are essential to the conservation of the species and which may require special management considerations or protection. These include, but are not limited to:

- (1) Space for individual and population growth and for normal behavior;
- (2) Food, water, air, light, minerals, or other nutritional or physiological requirements;
- (3) Cover or shelter;
- (4) Sites for breeding, reproduction, or rearing (or development) of offspring; and
- (5) Habitats that are protected from disturbance or are representative of the historical, geographic, and ecological distributions of a species.

We derive the specific physical or biological features essential for the Comal Springs dryopid beetle, Comal Springs riffle beetle, and Peck's cave amphipod from studies of this species' habitat, ecology, and life history as described below. Additional information can be found in the final listing rule published in the **Federal Register** on December 18, 1997 (62 FR 66295), the previous critical habitat designation (72 FR 39248, July 17, 2007), the Revised Recovery Plan (Service 1996), and the draft Edwards Aquifer Recovery Implementation Program Habitat Conservation Plan (HCP). We have determined that the following physical or biological features are essential for the Comal

Springs dryopid beetle, Comal Springs riffle beetle, and Peck's cave amphipod:

Space for Individual and Population Growth and for Normal Behavior

Very little is known regarding the space needed by the three invertebrate species for individual and population growth and for normal behavior. The Peck's cave amphipod and Comal Springs dryopid beetle are most commonly found in subterranean areas where plant roots are inundated or otherwise influenced by aquifer water. Gibson *et al.* (2008) found Peck's cave amphipod in gravel, rocks, and organic debris (leaves, roots, wood) immediately inside of or adjacent to springs, seeps, and upwellings of Comal Springs and their impoundment, Landa Lake. They were not observed in nearby surface habitats. Gibson *et al.* (2008, p. 76) collected Peck's cave amphipods in drift nets (a net that floats freely on surface water) which were placed over spring openings at Hueco and Comal springs. At Panther Canyon Well, specimens were collected in a baited bottle trap, which is located about 360 feet (ft) (110 meters (m)) from Comal Spring Run No. 1 (Gibson *et al.* 2008, p. 76; R. Gibson 2012b, pers. comm.). Gibson *et al.* (2008, p. 77), also found Comal Springs riffle beetles in drift nets at Comal Springs that were placed in or over spring openings. Therefore, based on the information above, we identify springs, associated streams, and underground spaces immediately inside of or adjacent to springs, seeps, and upwellings to be a primary component of the physical or biological features essential to the conservation of the Comal Springs dryopid beetle, Comal Springs riffle beetle, and Peck's cave amphipod.

Food, Water, Air, Light, Minerals, or Other Nutritional or Physiological Requirements

Food—Although specific food requirements of the three invertebrate species are unknown, potential food sources for all three invertebrate species include detritus (decomposed plant materials), leaf litter, and decaying roots. It is possible that the Comal Springs dryopid beetle, Comal Springs riffle beetle, and Peck's cave amphipod all feed on microorganisms such as bacteria and fungi associated with decaying riparian vegetation. Both beetle species likely are detritivores (detritus-feeding animals) that consume detrital materials from spring-influenced riparian (associated with rivers, creeks, or other water bodies) zones (Brown 1987, p. 262; Gibson *et al.* 2008, p. 77). Riparian vegetation is likely important for these species as they are typically found on roots where they feed on fungus and bacteria (Gibson *et al.* 2008, p. 77, Gibson 2012c, pers. comm.). Larvae of the Comal Springs dryopid beetle are also presumed to feed on bacteria and fungi associated with roots, debris, and soil lining the ceilings of subterranean cavities (Barr and Spangler 1992, p. 41). Available evidence suggests Peck's cave amphipod is likely an omnivore (consumes everything available including both animal and plant matter). It can feed as a scavenger or predator within the aquifer and as a detritivore where plant roots are exposed providing a medium for microbial growth as well as a food source to potential prey (Gibson 2012a, pers. comm.). Among other things, trees and shrubs in riparian areas adjacent to the spring system provide plant growth necessary to maintain food sources such as decaying material for these invertebrates. Roots from trees and shrubs in proximity to spring outlets are most likely to penetrate underground down to the

water pools where these roots can serve as habitat for the amphipod and dryopid beetle.

Therefore, based on the information above, we identify sources of detritus (decomposed materials), leaf litter, and decaying roots of riparian vegetation to be primary components of the physical or biological features essential to the conservation of the Comal Springs dryopid beetle, Comal Springs riffle beetle, and Peck's cave amphipod.

Water—The Comal Springs dryopid beetle, Comal Springs riffle beetle, and Peck's cave amphipod are all spring-adapted, aquatic species dependent on high-quality, unpolluted groundwater that has low levels of salinity and turbidity. The two beetle species are generally associated with water that has adequate levels of dissolved oxygen for respiration (Brown 1987, p. 260; Arsuffi 1993, p. 18). High-quality discharge water from springs and adjacent subterranean areas help sustain habitat components essential to these three aquatic invertebrate species.

The temperature of spring water emerging from the Edwards Aquifer at Comal Springs and San Marcos Springs ordinarily occurs within a narrow range of approximately 72 to 75 Fahrenheit degrees (°F) (22 to 24 Celsius degrees (°C)) (Fahlquist and Slattery 1997, pp. 3–4; Groeger *et al.* 1997, pp. 282–283). Hueco Springs and Fern Bank Springs have temperature records of 68 to 71°F (20 to 22°C) (George 1952, p. 52; Brune 1975, p. 94; Texas Water Development Board 2006, p. 1). The three listed

invertebrate species complete their life-cycle functions within these relatively narrow temperature ranges.

Each of these four spring systems typically provide adequate resources to sustain life-cycle functions for resident populations of the Comal Springs dryopid beetle, Comal Springs riffle beetle, or Peck's cave amphipod. However, a primary threat to the three invertebrate species is the potential failure of spring flow due to drought or groundwater pumping, which could result in loss of aquatic habitat for the species.

Barr (1993, p. 55) found Comal Springs dryopid beetles in spring flows with low- and high-volume discharge and suggested that presence of the species was not necessarily dependent on high spring flow. However, Barr (1993, p. 61) noted that effects on both subterranean species (dryopid beetle and amphipod) from extended loss of spring flow and low aquifer levels could not be predicted since details of their life cycles are unknown.

Riffle beetles are most commonly associated with flowing water that has shallow riffles or rapids (Brown 1987, p. 253). Riffle beetles are restricted to waters with high dissolved oxygen due to their reliance on a plastron (thin sheet of air held by water-repellent hairs of some aquatic insects) that is held next to the surface of the body by a mass of water-repellent hairs. The mass of water-repellent hairs function as a physical gill by allowing oxygen to passively diffuse from water into the plastron in order to

replace oxygen absorbed during respiration (Brown 1987, p. 260). However, slow-moving insects like riffle beetles are limited to habitats with high oxygen levels because oxygen will diffuse away from the beetle if concentrations are higher in the plastron than in the surrounding water (Resh *et al.* 2008, pp. 44–45).

Bowles *et al.* (2003, p. 379) pointed out that the mechanism by which the Comal Springs riffle beetle survived the 1950s drought and the extent to which its population was negatively impacted are unknown. Bowles *et al.* (2003, p. 379) speculated that the riffle beetle may be able to retreat back into spring openings or burrow down to the hyporheos (groundwater zone) below the stream channel. In reference to the Comal Springs population of the riffle beetle, Bowles *et al.* (2003, p. 380) stated that “Reductions in water levels in the Edwards Aquifer to the extent that spring-flows cease likely would have devastating effects on. . . [this] population of this species and could result in its extinction.”

Therefore, based on the information above, we identify unpolluted, high-quality water with stable temperatures flowing through subterranean habitat and exiting at spring openings to be primary components of the physical or biological features essential to the conservation of the Comal Springs dryopid beetle, Comal Springs riffle beetle, and Peck’s cave amphipod.

Habitats Protected from Disturbance or Representative of the Historical, Geographic, and

Ecological Distributions of the Species

These freshwater invertebrates rely on spring water that follows established hydrological flow paths within a limestone aquifer before emerging. Water inside limestone aquifers flows through fractures, pores, cave stream channels, and conduits (open channels) that have been hollowed out within the limestone by dissolution processes (White 1988, pp. 119–148, 150–151). Alteration of subsurface water flows through destruction of geologic features (for example, excavation) or creation of impediments to flow (for example, concrete filling) in proximity to spring outlets could negatively alter the hydraulic connectivity necessary to sustain these species. Areas of subsurface habitat must remain intact to provide adequate space for feeding, breeding, and sheltering of the two subterranean species (amphipod and dryopid beetle). In addition, subsurface habitat must remain intact with sufficient hydraulic connectivity of flow paths and conduits to ensure that other constituent elements (water quality, water quantity, and food supply) for the proposed critical habitat remain adequate for all three listed invertebrates.

Although Comal Springs riffle beetles occur in conjunction with a variety of bottom substrates that underlay these flow paths, Bowles *et al.* (2003, p. 372) found that these beetles mainly occurred in areas with gravel and cobble ranging between 0.3 to 5.0 in (inches) (8 to 128 millimeters (mm)) and did not occur in areas dominated by silt, sand, and small gravel. Collection efforts in areas of high sedimentation generally do not

yield riffle beetles (Bowles *et al.* 2003, p. 376; Gibson, 2012d, pers. comm.).

Therefore, based on the information above, we identify spring water that follows established hydrological flow paths within a limestone aquifer to be a primary component of the physical or biological features essential to the conservation of the Comal Springs dryopid beetle, Comal Springs riffle beetle, and Peck's cave amphipod.

Primary Constituent Elements for the Comal Springs Dryopid Beetle, Comal Springs Riffle Beetle, and Peck's Cave Amphipod

Under the Act and its implementing regulations, we are required to identify the physical or biological features essential to the conservation of the three invertebrates in areas occupied at the time of listing, focusing on the features' primary constituent elements. We consider primary constituent elements to be the elements of physical or biological features that provide for a species' life-history processes and are essential to the conservation of the species.

Based on our current knowledge of the physical or biological features and habitat characteristics required to sustain the species' life-history processes, we determine that the primary constituent elements specific to the Comal Springs dryopid beetle, Comal Springs riffle beetle, and Peck's cave amphipod are:

(1) Springs, associated streams, and underground spaces immediately inside of or adjacent to springs, seeps, and upwellings that include:

(a) High-quality water with no or minimal pollutant levels of soaps, detergents, heavy metals, pesticides, fertilizer nutrients, petroleum hydrocarbons, and semivolatile compounds such as industrial cleaning agents; and

(b) Hydrologic regimes similar to the historical pattern of the specific sites must be present, with continuous surface flow from the spring sites and in the subterranean aquifer.

(2) Spring system water temperatures that range from 68 to 75 °F (20 to 24 °C).

(3) Food supply that includes, but is not limited to, detritus (decomposed materials), leaf litter, living plant material, algae, fungi, bacteria, other microorganisms, and decaying roots.

With this proposed designation of critical habitat, we intend to identify the physical or biological features essential to the conservation of the species, through the identification of the features' primary constituent elements sufficient to support the life-history processes of the species. All units proposed to be revised as critical habitat designation are currently occupied by one or more of the three invertebrates and contain the primary constituent elements sufficient to support the life-history needs of the species.

Special Management Considerations or Protection

When designating critical habitat, we assess whether the specific areas within the geographic area occupied by the species at the time of listing contain features, which are essential to the conservation of the species and which may require special management considerations or protection.

For the Comal Springs dryopid beetle, Comal Springs riffle beetle, and Peck's cave amphipod, threats to adequate water quantity and quality (PCEs 1 and 2) include alterations to the natural flow regimes affecting the aquifer recharge system and its associated springs, streams, and riparian areas. Threats to water quantity and quality include water withdrawals, impoundment, and diversions; hazardous material spills; stormwater drainage pollutants including soaps, detergents, pharmaceuticals, heavy metals, fertilizer nutrients, petroleum hydrocarbons, and semivolatile compounds such as industrial cleaning agents; pesticides and herbicides associated with pathogenic organisms or invasive species; invasive species altering the surface habitat; excavation and construction surrounding the springs and in the watershed; and climate change. All of these threats are known to be ongoing at various levels in and around the Edwards Aquifer ecosystem. Examples of management actions that would ameliorate these threats include: (1) Maintenance of sustainable groundwater use and subsurface flows; (2) use of adequate buffers for water quality protection; (3) selection of appropriate pesticides

and herbicides; and (4) implementation of integrated pest management plans to manage existing invasive species as well as preventing the introduction of additional invasive species.

Climate change could potentially affect water quantity and spring flow as well as the food supply (PCEs 1, 2, and 3) for the Comal Springs dryopid beetle, Comal Springs riffle beetle, and Peck's Cave amphipod. According to the Intergovernmental Panel on Climate Change (IPCC; 2007, p. 1), "warming of the climate system is unequivocal, as is now evident from observations of increases in global averages of air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level." Localized projections suggest the southwestern United States may experience the greatest temperature increase of any area in the lower 48 States (IPCC 2007, p. 8), with warming increases in southwestern States greatest in the summer. The IPCC also predicts hot extremes, heat waves, and heavy precipitation will increase in frequency (IPCC 2007, p. 8).

The degree to which climate change will affect habitats of the Comal Springs dryopid beetle, Comal Springs riffle beetle, and Peck's Cave amphipod is uncertain. Climate change will be a particular challenge for biodiversity in general because the interaction of additional stressors associated with climate change and current stressors may push species beyond their ability to survive (Lovejoy 2005, pp. 325–326). The synergistic implications of climate change and habitat fragmentation are the most

threatening facets of climate change for biodiversity (Hannah and Lovejoy 2005, p. 4). Current climate change predictions for terrestrial areas in the Northern Hemisphere indicate warmer air temperatures, more intense precipitation events, and increased summer continental drying (Field *et al.* 1999, pp. 1–3; Hayhoe *et al.* 2004, p. 12422; Cayan *et al.* 2005, p. 6; IPCC 2007, p. 1181). Climate change may lead to increased frequency and duration of severe storms and droughts (McLaughlin *et al.* 2002, p. 6074; Cook *et al.* 2004, p. 1015; Golladay *et al.* 2004, p. 504).

An increased risk of drought could occur if evaporation exceeds precipitation levels in a particular region due to increased greenhouse gases in the atmosphere (CH2M HILL 2007, p. 18). The Edwards Aquifer is also predicted to experience additional stress from climate change that could lead to decreased recharge and low or ceased spring flows given increasing pumping demands (Loáiciga *et al.* 2000, pp. 192–193). CH2M HILL (2007, pp. 22–23) identified possible effects of climate change on water resources within the Lower Colorado River Watershed (which contributes recharge to Barton Springs). Barton Springs is fed by the Barton Springs segment of the Edwards Aquifer, not far to the north of the area used by these invertebrates. A reduction of recharge to aquifers and a greater likelihood for more extreme droughts were identified as potential impacts to water resources (CH2M HILL 2007, p. 23). The droughts of 2008-2009 and 2010-2011 were two of the worst short-term droughts in central Texas history, with the period from October 2010 through September 2011 being the driest 12-month period in Texas since rainfall records began (Lower Colorado River Authority (LCRA) 2011, p. 1). As a result,

the effects of climate change could compound the threat of decreased water quantity due to drought.

Criteria Used To Identify Critical Habitat

As required by section 4(b)(2) of the Act, we use the best scientific data available to designate critical habitat. We review available information pertaining to the habitat requirements of the species. In accordance with the Act and its implementing regulation at 50 CFR 424.12(e), we consider whether designating additional areas—outside those currently occupied as well as those occupied at the time of listing—are necessary to ensure the conservation of the species. We are proposing to designate critical habitat in areas within the geographical area occupied by the species at the time of listing in 1997.

During our preparation for proposing critical habitat for these three endangered invertebrate species, we reviewed the best available scientific information including: (1) Historical and current occurrence records, (2) information pertaining to habitat features for these species, and (3) scientific information on the biology and ecology of each species. We have also reviewed a number of studies and surveys of the three listed invertebrates including: Holsinger (1967), Bosse *et al.* (1988), Barr and Spangler (1992), Arsuffi (1993), Barr (1993), Bio-West (2001), Bio-West (2002a), Bio-West (2002b), Bio-West (2003), Bowles *et al.* (2003), Bio-West (2004), Fries *et al.* (2004), and Gibson *et al.* (2008).

Based on this review, the proposed critical habitat areas described below constitute our best assessment at this time of areas that: (1) Are within the geographical range occupied by at least one of the three invertebrate species, and (2) contain features essential to the conservation of these species which may require special management considerations or protections. All areas proposed to be designated as critical habitat are occupied by at least one of the three invertebrates and contain sufficient primary constituent elements to support the life functions of the resident species. We defined the boundaries of each species based on the below criteria.

Comal Springs Dryopid Beetle

We identified both surface and subsurface components of critical habitat for this species, which has been found in Comal Springs and Fern Bank Springs in Comal and Hays Counties, Texas. However, this species was recently collected from Panther Canyon Well, located about 360 ft (110 m) away from the spring outlet of Spring Run No. 1 (Barr and Spangler 1992, p. 42; Gibson 2012e, pers. comm.). Collections made from 2003 to 2009 further extended the known range of the beetle within the Comal Springs system to all major spring runs, seeps along the western shoreline of Landa Lake (the impounded portion of the Comal Springs system), Landa Lake upwellings in the Spring Island area, and Panther Canyon Well (Bio-West, Inc. 2003, p. 34; Bio-West 2004, pp. 5-6; Bio-West 2005, pp. 5-6; Bio-West 2006, p. 37; Bio-West to 2009, pp. 40-

43; R. Gibson 2012e, pers. comm.). This information indicates that the Comal Springs dryopid beetle can travel through the aquifer up to a distance of 360 ft (110 m); therefore, we used this distance from spring outlets to identify the subsurface area of critical habitat for this species.

To determine surface critical habitat, we used an area consisting of a 50-ft (15-m) distance from spring outlets. We used this area because this distance has been found to contain food sources where plant roots interface with water flows of the spring systems. This 50-ft (15-m) distance defines the lateral extent of surface critical habitat that contains elements necessary to provide for life functions of this species with respect to roots that can penetrate into the aquifer. The 50-ft (15-m) distance was calculated from evaluations of aerial photographs and is based on tree and shrub canopies occurring in proximity to spring outlets. Extent of canopy cover reflects the approximate distances where plant root systems interface with water flows of the two spring systems. Critical habitat unit boundaries were delineated by creating approximate areas for the units by screen-digitizing polygons (map units) using ArcMap, version 10 (Environmental Systems Research Institute, Inc.) and 2011 aerial imagery.

Comal Springs Riffle Beetle

For the Comal Springs riffle beetle, we only identified surface critical habitat because this species' habitat is primarily restricted to surface water, which is located in

two impounded spring systems in Comal and Hays Counties, Texas. In Comal County, this aquatic beetle is found in various spring outlets of Comal Springs that occur within Landa Lake over a linear distance of approximately 0.9 mi (1.4 km). The species has also been found in outlets of San Marcos Springs in the upstream portion of Spring Lake in Hays County. However, populations of Comal Springs riffle beetles may exist elsewhere in Spring Lake (excluding a slough portion that lacks spring outlets), but sampling for riffle beetles at spring outlets within the lake has only been done on a limited basis. Excluding the slough portion that lacks spring outlets, the approximate linear distance of Spring Lake at its greatest length is 0.2 mi (0.3 km). Critical habitat unit boundaries for surface area were delineated using the same criteria as described above for the Comal Springs dryopid beetle.

Peck's Cave Amphipod

We identified both surface and subsurface components of critical habitat for this species, which has been found in Comal Springs and Hueco Springs, both located in Comal County, Texas. The extent to which this subterranean species exists below ground away from spring outlets is unknown; however, other species within the genus *Stygobromus* are widely distributed in groundwater and cave systems (Holsinger 1972, p. 65). Like the Comal Springs dryopid beetle, the Peck's cave amphipod has been collected from the bottom of Panther Canyon Well, which is located about 360 ft (110 m) away from the spring outlet of Spring Run No. 1 in the Comal Springs complex (Barr and

Spangler 1992, p. 42; Gibson *et al.* 2008, p. 76). To determine surface critical habitat, we used a 50-ft (15-m) distance from the shoreline of both Comal Springs and Hueco Springs (including several satellite springs that are located between the main outlet of Hueco Springs and the Guadalupe River) to include amphipod food sources in the root-water interfaces around spring outlets. Critical habitat unit boundaries were delineated using the same criteria as described above for the other two invertebrate species.

The definition of critical habitat under the Act includes areas outside the geographical area occupied by the species at the time of listing, if those areas are found to be essential to the conservation of the species. In the case of the Comal Springs dryopid beetle, Comal Springs riffle beetle, and Peck's cave amphipod, the geographical area occupied by the species at the time of listing encompasses the known historic range of these species. As such, we have not found any areas outside the geographical areas occupied by these species at the time of their listing to be essential to the conservation of these species and, therefore, we are not proposing to designate any unoccupied areas as critical habitat.

When determining proposed critical habitat boundaries, we made every effort to avoid including developed areas such as lands covered by buildings, pavement, and other structures on the surface that lack physical or biological features necessary for the Comal Springs dryopid beetle, Comal Springs riffle beetle and Peck's cave amphipod. Subterranean critical habitat for the Comal Springs dryopid beetle and Peck's cave

amphipod may extend under such structures and remains part of the critical habitat. The scale of the maps we prepared under the parameters for publication within the Code of Federal Regulations may not reflect the exclusion of such developed lands. Any such lands inadvertently left inside critical habitat boundaries shown on the maps of this proposed rule have been excluded by text in the proposed rule and are not proposed for designation as critical habitat. Therefore, if the critical habitat is finalized as proposed, a Federal action involving these lands would not trigger section 7 consultation with respect to critical habitat and the requirement of no adverse modification unless the specific action would affect the physical or biological features in the adjacent critical habitat.

We are proposing for designation of critical habitat lands that we have determined are occupied at the time of listing and contain sufficient elements of physical or biological features to support life-history processes essential for the conservation of the species.

Units were proposed for designation based on sufficient elements of physical or biological features being present to support Comal Springs dryopid beetle, Comal Springs riffle beetle, and Peck's cave amphipod life-history processes. All units contain all of the identified elements of physical or biological features and support multiple life-history processes.

The critical habitat designation is defined by the map or maps, as modified by any

accompanying regulatory text, presented at the end of this document in the rule portion.

We include more detailed information on the boundaries of the critical habitat designation in the preamble of this document. We will make the coordinates or plot points or both on which each map is based available to the public on

<http://www.regulations.gov> at Docket No. **FWS-R2-ES-2012-0082**, on our Internet sites <http://www.fws.gov/southwest/es/austintexas/>, and at the field office responsible for the designation (see FOR FURTHER INFORMATION CONTACT above).

Summary of Changes From Previously Designated Critical Habitat

The areas identified in this proposed rule constitute a proposed revision of the areas we designated as critical habitat for the Comal Springs dryopid beetle, Comal Springs riffle beetle, and Peck's cave amphipod on July 17, 2007 (72 FR 39248). The significant differences between the 2007 rule and this proposal are:

- (1) In the 2007 critical habitat rule for these species, we did not designate subsurface critical habitat. However, we are designating subsurface critical habitat for the Comal Springs dryopid beetle and the Peck's cave amphipod in this rule.
- (2) The amount of critical habitat is increasing in this proposed rule because (1) we are including subsurface habitat for the Comal Springs dryopid beetle and Peck's Cave amphipod, and (2) we are including the area 50 ft (15 m) from the shoreline for the Comal Springs riffle beetle.

- (3) The primary constituent elements have been consolidated from five in the original critical habitat rule to three to better incorporate and define subsurface attributes.

Proposed Critical Habitat Designation

We are proposing four units as critical habitat for the three invertebrates. The critical habitat areas we describe below constitute our current best assessment of areas that meet the definition of critical habitat for the Comal Springs dryopid beetle, Comal Springs riffle beetle, and Peck's cave amphipod. The four units we propose as critical habitat are: (1) Comal Springs, (2) Hueco Springs, (3) Fern Bank Springs, and (4) San Marcos Springs. Table 1 shows the occupied units, and Tables 2, 3, and 4 provide the approximate area of each proposed critical habitat unit for each species.

TABLE 1.—Occupancy of Comal Springs dryopid beetle, Comal Spring riffle beetle, and Peck's Cave amphipod by proposed critical habitat units.

Unit	Occupied at Time of Listing?	Currently Occupied?	Listed Species in Unit
1. Comal Springs	Yes	Yes	Comal Springs dryopid beetle, Comal Springs riffle beetle,

			and Pecks cave amphipod
2. Hueco Springs	Yes	Yes	Peck's cave amphipod
3. Fern Bank Springs	Yes	Yes	Comal Springs dryopid beetle
4. San Marcos Springs	Yes	Yes	Comal Springs riffle beetle

TABLE 2.—Proposed critical habitat units for the Comal Springs dryopid beetle.
Area estimates reflect all land within critical habitat unit boundaries.

Critical Habitat Units for the Comal Springs Dryopid Beetle	Land Ownership by Type	Size of Unit in Acres (Hectares) (Subsurface Critical Habitat)	Size of Unit in Acres (Hectares) (Surface Critical Habitat)
1. Comal Springs	State, City, Private	124 (50)	38 (15)
2. Fern Bank Springs	Private	15 (6)	1.4 (0.56)
Total		139 (56)	39.4 (15.56)

Note: Area sizes may not sum due to rounding.

TABLE 3.— Proposed critical habitat units for the Comal Springs riffle beetle.
Area estimates reflect all land within critical habitat unit boundaries.

Critical Habitat Units for the Comal Springs Riffle Beetle	Land Ownership by Type	Size of Unit in Acres (Hectares) (Surface Critical Habitat)
1. Comal Springs	State, City, Private	38 (15)
2. San Marcos Springs	State	16 (6)
Total		54 (22)

Note: Area sizes may not sum due to rounding.

TABLE 4.— Proposed critical habitat units for the Peck’s Cave amphipod. Area estimates reflect all land within critical habitat unit boundaries.

Critical Habitat Units for the Peck’s Cave Amphipod	Land Ownership by Type	Size of Unit in Acres (Hectares) (Subsurface Critical Habitat)	Size of Unit in Acres (Hectares) (Surface Habitat)
1. Comal Springs	State, City, Private	124 (50)	38 (15)

2. Hueco Springs	Private	14 (6)	0.4 (0.16)
Total		138 (56)	38.4 (15.16)

Note: Area sizes may not sum due to rounding.

We present brief descriptions of all units, and reasons why they meet the definition of critical habitat for the Comal Springs dryopid beetle, Comal Springs riffle beetle, and Peck's cave amphipod, below.

Unit 1: Comal Springs Unit

The purpose of this unit is to independently support a population of Comal Springs dryopid beetle, Comal Springs riffle beetle, and Peck's cave amphipod in a functioning spring system with associated streams and underground spaces immediately inside of or adjacent to springs, seeps, and upwellings that provide suitable water quality, supply, and detritus (decomposed plant material).

Unit 1 contains Comal Springs and consists of 124 ac (50 ha) of subsurface critical habitat for the Comal Springs dryopid beetle and the Peck's cave amphipod (Table 2 and 4). Unit 1 also contains 38 ac (15 ha) of surface habitat for these two species along with the Comal Springs riffle beetle (Table 3). This unit was occupied at the time of listing and is still occupied by the Comal Springs dryopid beetle, Comal

Springs riffle beetle, and Peck's cave amphipod (Table 1).

The Comal Springs Unit is owned by the State, City of New Braunfels, and private landowners in southern Comal County, Texas. A large portion of the unit is operated as a city park (Landa Park) with private residences and landscaped yards along the edge of the lower part of the unit. The surface water and bottom of Landa Lake are State-owned. The City of New Braunfels owns approximately 40 percent of the land surface adjacent to the lake, and private landowners own approximately 60 percent. This nearly L-shaped lake is surrounded by the City of New Braunfels. The spring system primarily occurs as a series of spring outlets that lie along the west shore of Landa Lake and within the lake itself. Practically all of the spring outlets and spring runs associated with Comal Springs occur within the upper part of the lake above the confluence of Spring Run No. 1 to the lake. The unit is also occupied by the federally listed fountain darter (*Etheostoma fonticola*).

This unit contains all of the essential physical and biological features for these species. The physical or biological features in this unit require special management or protection because of the potential for depletion of spring flow from water withdrawals, hazardous materials spills from a variety of sources in the watershed, pesticide use throughout the watershed, excavation and construction surrounding the springs and in the watershed, stormwater pollutants in the watershed, and invasive species impacts on the surface habitat.

Unit 2: Hueco Springs

The purpose of this unit is to independently support a population of Peck's cave amphipod in a functioning spring system with associated streams and underground spaces immediately inside of or adjacent to springs, seeps, and upwellings that provide suitable water quality, supply, and detritus (decomposed plant material).

Unit 2 contains Hueco Springs and consists of 14 ac (6 ha) of surface and 0.4 ac (0.16 ha) of subsurface critical habitat for the Peck's cave amphipod (Table 4). This unit was occupied at the time of listing and is still occupied by the Peck's cave amphipod (Table 1).

The Hueco Springs Unit is on private land in Hays County, Texas. The property is primarily undeveloped. The spring system has a main outlet that is located approximately 0.1 mi (0.2 km) south of the junction of Elm Creek with the Guadalupe River in Comal County. The main outlet itself lies approximately 500 ft (152 m) from the west bank of the Guadalupe River. Several satellite springs lie further south between the main outlet and the river. The main outlet of Hueco Springs is located on undeveloped land, but the associated satellite springs occur within a privately owned campground for recreational vehicles. There is an access road to a field for parking, but no facilities or utilities.

This unit contains all of the essential physical and biological features for this species. The physical or biological features in this unit require special management because of the potential for depletion of spring flow from water withdrawals, pesticide use throughout the watershed, and excavation and construction surrounding the springs and in the watershed.

Unit 3: Fern Bank Springs

The purpose of this unit is to independently support a population of Comal Springs dryopid beetle in a functioning spring system with associated streams and underground spaces immediately inside of or adjacent to springs, seeps, and upwellings that provide suitable water quality, supply, and detritus (decomposed plant material).

Unit 3 contains Fern Bank Springs and consists of 15 ac (6 ha) of surface and 1.4 ac (0.56 ha) subsurface critical habitat for the Comal Springs dryopid beetle (Table 2). This unit was occupied at the time of listing and is still occupied by the Comal Springs dryopid beetle (Table 1),

The Fern Bank Springs Unit is on private land in Hays County, Texas, approximately 0.2 mi (0.4 km) east of the junction of Sycamore Creek with the Blanco River. The property and surrounding area are primarily undeveloped. However, there is

one rural residential home with property overlooking the springs which is a small portion of this unit. The spring system consists of a main outlet and a number of seep springs that occur at the base of a high bluff overlooking the Blanco River.

This unit contains all of the essential physical and biological features for this species. The physical or biological features in this unit require special management because of the potential for depletion of spring flow from water withdrawals, pesticide use throughout the watershed, and excavation and construction surrounding the springs and in the watershed.

Unit 4: San Marcos Springs

The purpose of this unit is to independently support a population of Comal Springs riffle beetle in a functioning spring system with associated streams that provide suitable water quality, supply, and detritus (decomposed plant material).

Unit 4 contains San Marcos Springs and consists of 16 ac (6 ha) of surface critical habitat for the Comal Springs riffle beetle (Table 3). This unit was occupied at the time of listing and is still occupied by the Comal Springs riffle beetle (Table 1).

This unit is located on State lands in the City of San Marcos, Hays County, Texas. In addition to the Comal Springs riffle beetle, the San Marcos Springs system provides

habitat for five other federally listed species: (1) the endangered fountain darter, (2) the endangered San Marcos gambusia (*Gambusia georgei*), (3) the threatened San Marcos salamander (*Eurycea nana*), (4) the endangered Texas blind salamander (*Typhlomolge rathbuni*), and (5) the endangered Texas wild-rice (*Zizania texana*). Critical habitat has been designated for the fountain darter, San Marcos gambusia, San Marcos salamander, and Texas wild-rice within San Marcos Springs and portions of the San Marcos River that lie downstream from Spring Lake.

This unit contains all of the essential physical and biological features for this species. The physical or biological features in this unit require special management or protection because of the potential for depletion of spring flow from water withdrawals, hazardous materials spills from a variety of sources in the watershed, pesticide use throughout the watershed, excavation and construction surrounding the springs and in the watershed, stormwater pollutants in the watershed, and invasive species impacts on the surface habitat.

Effects of Critical Habitat Designation

Section 7 Consultation

Section 7(a)(2) of the Act requires Federal agencies, including the Service, to ensure that any action they fund, authorize, or carry out is not likely to jeopardize the

continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat of such species. In addition, section 7(a)(4) of the Act requires Federal agencies to confer with the Service on any agency action which is likely to jeopardize the continued existence of any species proposed to be listed under the Act or result in the destruction or adverse modification of proposed critical habitat.

Decisions by the 5th and 9th Circuit Courts of Appeals have invalidated our regulatory definition of “destruction or adverse modification” (50 CFR 402.02) (see *Gifford Pinchot Task Force v. U.S. Fish and Wildlife Service*, 378 F. 3d 1059 (9th Cir. 2004) and *Sierra Club v. U.S. Fish and Wildlife Service et al.*, 245 F.3d 434, 442 (5th Cir. 2001)), and we do not rely on this regulatory definition when analyzing whether an action is likely to destroy or adversely modify critical habitat. Under the statutory provisions of the Act, we determine destruction or adverse modification on the basis of whether, with implementation of the proposed Federal action, the affected critical habitat would continue to serve its intended conservation role for the species.

If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency (action agency) must enter into consultation with us. Examples of actions that are subject to the section 7 consultation process are actions on State, tribal, local, or private lands that require a Federal permit (such as a permit from the U.S. Army Corps of Engineers under section 404 of the Clean Water Act (33 U.S.C. 1251 *et seq.*) or a permit

from the Service under section 10 of the Act) or that involve some other Federal action (such as funding from the Federal Highway Administration, Federal Aviation Administration, or the Federal Emergency Management Agency). Federal actions not affecting listed species or critical habitat, and actions on State, tribal, local, or private lands that are not federally funded or authorized, do not require section 7 consultation.

As a result of section 7 consultation, we document compliance with the requirements of section 7(a)(2) through our issuance of:

- (1) A concurrence letter for Federal actions that may affect, but are not likely to adversely affect, listed species or critical habitat; or
- (2) A biological opinion for Federal actions that may affect and are likely to adversely affect, listed species or critical habitat.

When we issue a biological opinion concluding that a project is likely to jeopardize the continued existence of a listed species and/or destroy or adversely modify critical habitat, we provide reasonable and prudent alternatives to the project, if any are identifiable, that would avoid the likelihood of jeopardy and/or destruction or adverse modification of critical habitat. We define “reasonable and prudent alternatives” (at 50 CFR 402.02) as alternative actions identified during consultation that:

- (1) Can be implemented in a manner consistent with the intended purpose of the action,
- (2) Can be implemented consistent with the scope of the Federal agency’s legal

authority and jurisdiction,

(3) Are economically and technologically feasible, and

(4) Would, in the Director's opinion, avoid the likelihood of jeopardizing the continued existence of the listed species and/or avoid the likelihood of destroying or adversely modifying critical habitat.

Reasonable and prudent alternatives can vary from slight project modifications to extensive redesign or relocation of the project. Costs associated with implementing a reasonable and prudent alternative are similarly variable.

Regulations at 50 CFR 402.16 require Federal agencies to reinitiate consultation on previously reviewed actions in instances where we have listed a new species or subsequently designated critical habitat that may be affected and the Federal agency has retained discretionary involvement or control over the action (or the agency's discretionary involvement or control is authorized by law). Consequently, Federal agencies sometimes may need to request reinitiation of consultation with us on actions for which formal consultation has been completed, if those actions with discretionary involvement or control may affect subsequently listed species or designated critical habitat.

Application of the "Adverse Modification" Standard

The key factor related to the adverse modification determination is whether, with implementation of the proposed Federal action, the affected critical habitat would continue to serve its intended conservation role for the species. Activities that may destroy or adversely modify critical habitat are those that alter the physical or biological features to an extent that appreciably reduces the conservation value of critical habitat for the Comal Springs dryopid beetle, Comal Springs riffle beetle, and Peck's cave amphipod. As discussed above, the role of critical habitat is to support life-history needs of the species and provide for the conservation of the species.

Section 4(b)(8) of the Act requires us to briefly evaluate and describe, in any proposed or final regulation that designates critical habitat, activities involving a Federal action that may destroy or adversely modify such habitat, or that may be affected by such designation.

Activities that may affect critical habitat, when carried out, funded, or authorized by a Federal agency, should result in consultation for the three invertebrates. These activities include, but are not limited to:

(1) Actions that would change the existing flow regimes and would thereby significantly and detrimentally alter the primary constituent elements necessary for conservation of these species. Such activities could include, but are not limited to, water withdrawal, impoundment, and water diversions. These activities could eliminate or

reduce the habitat necessary for the growth and reproduction of these species.

(2) Actions that would introduce, spread, or augment nonnative species could destroy or adversely modify the critical habitat of any listed invertebrate species. Such actions could include, but are not limited to, stocking or otherwise transporting nonnative species into critical habitat for any purpose.

(3) Actions that would alter current habitat conditions. Such actions include, but are not limited to, the release of chemical or biological pollutants into the surface water or connected groundwater at a point source or by dispersed release (nonpoint source). These activities could alter water conditions to a point that extend beyond the tolerances of the Comal Springs dryopid beetle, Comal Springs riffle beetle, or Peck's cave amphipod, and result in direct or cumulative adverse effects to these individuals and their life cycles or eliminate or reduce the habitat necessary for the growth, reproduction, and survival of these invertebrate species.

(4) Actions that would physically remove or alter the habitat used by the three invertebrates. These activities could lead to increased sedimentation and degradation in water quality to levels that are beyond the tolerances of the Comal Springs dryopid beetle, Comal Springs riffle beetle, or Peck's cave amphipod. Such activities could include, but are not limited to, channelization, impoundment, road and bridge construction, deprivation of substrate source, destruction and alteration of riparian

vegetation, and excessive sedimentation from road construction, vegetation removal, recreational facility development, and other watershed disturbances.

Exemptions

Application of Section 4(a)(3) of the Act

The Sikes Act Improvement Act of 1997 (Sikes Act) (16 U.S.C. 670a) required each military installation that includes land and water suitable for the conservation and management of natural resources to complete an integrated natural resources management plan (INRMP) by November 17, 2001. An INRMP integrates implementation of the military mission of the installation with stewardship of the natural resources found on the base. Each INRMP includes:

- (1) An assessment of the ecological needs on the installation, including the need to provide for the conservation of listed species;
- (2) A statement of goals and priorities;
- (3) A detailed description of management actions to be implemented to provide for these ecological needs; and
- (4) A monitoring and adaptive management plan.

Among other things, each INRMP must, to the extent appropriate and applicable, provide for fish and wildlife management; fish and wildlife habitat enhancement or

modification; wetland protection, enhancement, and restoration where necessary to support fish and wildlife; and enforcement of applicable natural resource laws.

The National Defense Authorization Act for Fiscal Year 2004 (Pub. L. 108-136) amended the Act to limit areas eligible for designation as critical habitat. Specifically, section 4(a)(3)(B)(i) of the Act (16 U.S.C. 1533(a)(3)(B)(i)) now provides: “The Secretary shall not designate as critical habitat any lands or other geographic areas owned or controlled by the Department of Defense, or designated for its use, that are subject to an integrated natural resources management plan prepared under section 101 of the Sikes Act (16 U.S.C. 670a), if the Secretary determines in writing that such plan provides a benefit to the species for which critical habitat is proposed for designation.”

There are no Department of Defense lands with a completed INRMP within the proposed critical habitat designation.

Exclusions

Application of Section 4(b)(2) of the Act

Section 4(b)(2) of the Act states that the Secretary shall designate and make revisions to critical habitat on the basis of the best available scientific data after taking into consideration the economic impact, national security impact, and any other relevant

impact of specifying any particular area as critical habitat. The Secretary may exclude an area from critical habitat if he determines that the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat, unless he determines, based on the best scientific data available, that the failure to designate such area as critical habitat will result in the extinction of the species. In making that determination, the statute on its face, as well as the legislative history, are clear that the Secretary has broad discretion regarding which factor(s) to use and how much weight to give to any factor.

Under section 4(b)(2) of the Act, we may exclude an area from designated critical habitat based on economic impacts, impacts on national security, or any other relevant impacts. In considering whether to exclude a particular area from the designation, we identify the benefits of including the area in the designation, identify the benefits of excluding the area from the designation, and evaluate whether the benefits of exclusion outweigh the benefits of inclusion. If the analysis indicates that the benefits of exclusion outweigh the benefits of inclusion, the Secretary may exercise his discretion to exclude the area only if such exclusion would not result in the extinction of the species.

Exclusions Based on Economic Impacts

Under section 4(b)(2) of the Act, we consider the economic impacts of specifying any particular area as critical habitat. In order to consider economic impacts, we are preparing an analysis of the economic impacts of the proposed critical habitat designation

and related factors. The proposed critical habitat areas include Federal, State, tribal, and private lands, some of which are used for mining and recreation (such as hiking, camping, horseback riding, and hunting). Other land uses that may be affected will be identified as we develop the draft economic analysis for the proposed designation.

Key findings in the economic analysis for the 2007 final rule designating critical habitat predicted for the next 20 years are impacts primarily associated with water use changes including reductions in water withdrawals, and subsequently, increased water costs. Other costs included conservation efforts and a restoration project specific to San Marcus and Comal Springs. The majority of the economic impacts quantified in this analysis were a result of the presence of eight endangered species including the three Comal Springs invertebrates. Because all the species reside in the same habitat, separating future impacts of these three invertebrates from the other listed species in the aquifer was not possible.

During the development of a final designation, we will consider economic impacts, public comments, and other new information, and areas may be excluded from the final critical habitat designation under section 4(b)(2) of the Act and our implementing regulations at 50 CFR 424.19.

Exclusions Based on National Security Impacts

Under section 4(b)(2) of the Act, we consider whether there are lands owned or managed by the Department of Defense where a national security impact might exist. In preparing this proposal, we have determined that the lands within the proposed designation of critical habitat for the Comal Springs dryopid beetle, Comal Springs riffle beetle, and Peck's cave amphipod are not owned or managed by the Department of Defense, and, therefore, we anticipate no impact on national security. Consequently, the Secretary is not intending to exercise his discretion to exclude any areas from the final designation based on impacts on national security.

Exclusions Based on Other Relevant Impacts

Under section 4(b)(2) of the Act, we consider any other relevant impacts, in addition to economic impacts and impacts on national security. We consider a number of factors, including whether the landowners have developed any HCPs or other management plans for the area, or whether there are conservation partnerships that would be encouraged by designation of, or exclusion from, critical habitat. In addition, we look at any tribal issues, and consider the government-to-government relationship of the United States with tribal entities. We also consider any social impacts that might occur because of the designation.

Land and Resource Management Plans, Conservation Plans, or Agreements Based on Conservation Partnerships

We consider a current land management or conservation plan (HCPs as well as other types) to provide adequate management or protection if it meets the following criteria:

(1) The plan is complete and provides the same or better level of protection from adverse modification or destruction than that provided through a consultation under section 7 of the Act;

(2) There is a reasonable expectation that the conservation management strategies and actions will be implemented for the foreseeable future, based on past practices, written guidance, or regulations; and

(3) The plan provides conservation strategies and measures consistent with currently accepted principles of conservation biology.

We believe that the Edwards Aquifer Recovery Implementation Program (EARIP) Habitat Conservation Plan may fulfill the above criteria, and will consider the exclusion of the lands covered by this plan that provide for the conservation of the Comal Springs dryopid beetle, Comal Springs riffle beetle, and Peck's cave amphipod. The EARIP HCP is intended to resolve the longstanding conflict between the federal mandate to protect threatened and endangered species associated with the Edwards Aquifer and the region's dependence on the same aquifer as its primary water resource. Through the EARIP HCP, the Edwards Aquifer Authority, San Antonio Water System, City of New Braunfels, City of San Marcos, and Texas State University will be implementing actions

to minimize and mitigate the effects of pumping, to conserve the Aquifer-dependent spring ecosystems, and contribute to the recovery of the covered species. The Notice of Availability for the Draft Environmental Impact Statement and Draft EARIP Habitat Conservation Plan was published in the Federal Register on July 20, 2012, and the public comment period remains open until October 18, 2012. Once the public comment period is closed and any substantive comments are addressed, the Service will make a decision on the issuance of an Incidental Take Permit under section 10 of the Act. We are requesting comments on the benefit to the Comal Springs dryopid beetle, Comal Springs riffle beetle, and Peck's cave amphipod from the EARIP HCP.

In preparing this proposal, we have also determined that the proposed designation does not include any tribal lands or trust resources. Accordingly, the Secretary does not intend to exercise his discretion to exclude any areas from the final designation based on other relevant impacts. We are not considering any areas for exclusion at this time from the final designation under section 4(b)(2) of the Act based on partnerships, management, or protection afforded by cooperative management efforts. In this proposed rule, we are seeking input from the public on the benefit to the Comal Springs dryopid beetle, Comal Springs riffle beetle, and Peck's cave amphipod from the EARIP HCP. Please see the **ADDRESSES** section, above, of this proposed revised rule for instructions on how to submit comments.

Peer Review

In accordance with our joint policy on peer review published in the **Federal Register** on July 1, 1994 (59 FR 34270), we will seek the expert opinions of at least three appropriate and independent specialists regarding this proposed rule. The purpose of peer review is to ensure that our critical habitat designation is based on scientifically sound data, assumptions, and analyses. We have invited these peer reviewers to comment during this public comment period.

We will consider all comments and information received during this comment period on this proposed rule during our preparation of a final determination. Accordingly, the final decision may differ from this proposal.

Public Hearings

Section 4(b)(5) of the Act provides for one or more public hearings on this proposal, if requested. Requests must be received within 45 days after the date of publication of this proposed rule in the **Federal Register**. Such requests must be sent to the address shown in **FOR FURTHER INFORMATION CONTACT**. We will schedule public hearings on this proposal, if any are requested, and announce the dates, times, and places of those hearings, as well as how to obtain reasonable accommodations, in the **Federal Register** and local newspapers at least 15 days before the hearing.

Required Determinations*Regulatory Planning and Review (Executive Orders 12866 and 13563)*

Executive Order 12866 provides that the Office of Information and Regulatory Affairs (OIRA) will review all significant rules. The Office of Information and Regulatory Affairs has determined that this rule is not significant.

Executive Order 13563 reaffirms the principles of E.O. 12866 while calling for improvements in the nation's regulatory system to promote predictability, to reduce uncertainty, and to use the best, most innovative, and least burdensome tools for achieving regulatory ends. The executive order directs agencies to consider regulatory approaches that reduce burdens and maintain flexibility and freedom of choice for the public where these approaches are relevant, feasible, and consistent with regulatory objectives. E.O. 13563 emphasizes further that regulations must be based on the best available science and that the rulemaking process must allow for public participation and an open exchange of ideas. We have developed this rule in a manner consistent with these requirements.

Regulatory Flexibility Act (5 U.S.C. 601 et seq.)

Under the Regulatory Flexibility Act (RFA; 5 U.S.C. 601 *et seq.*) as amended by

the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996 (5 U.S.C 801 *et seq.*), whenever an agency must publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effects of the rule on small entities (small businesses, small organizations, and small government jurisdictions). However, no regulatory flexibility analysis is required if the head of the agency certifies the rule will not have a significant economic impact on a substantial number of small entities. The SBREFA amended the RFA to require Federal agencies to provide a certification statement of the factual basis for certifying that the rule will not have a significant economic impact on a substantial number of small entities.

According to the Small Business Administration, small entities include small organizations such as independent nonprofit organizations; small governmental jurisdictions, including school boards and city and town governments that serve fewer than 50,000 residents; and small businesses (13 CFR 121.201). Small businesses include such businesses as manufacturing and mining concerns with fewer than 500 employees, wholesale trade entities with fewer than 100 employees, retail and service businesses with less than \$5 million in annual sales, general and heavy construction businesses with less than \$27.5 million in annual business, special trade contractors doing less than \$11.5 million in annual business, and forestry and logging operations with fewer than 500 employees and annual business less than \$7 million. To determine whether small entities may be affected, we will consider the types of activities that might trigger regulatory

impacts under this designation as well as types of project modifications that may result. In general, the term “significant economic impact” is meant to apply to a typical small business firm’s business operations.

Importantly, the incremental impacts of a rule must be *both* significant and substantial to prevent certification of the rule under the RFA and to require the preparation of an initial regulatory flexibility analysis. If a substantial number of small entities are affected by the proposed critical habitat designation, but the per-entity economic impact is not significant, the Service may certify. Likewise, if the per-entity economic impact is likely to be significant, but the number of affected entities is not substantial, the Service may also certify.

Under the RFA, as amended, and following recent court decisions, Federal agencies are only required to evaluate the potential incremental impacts of rulemaking on those entities directly regulated by the rulemaking itself, and not the potential impacts to indirectly affected entities. The regulatory mechanism through which critical habitat protections are realized is section 7 of the Act, which requires Federal agencies, in consultation with the Service, to ensure that any action authorized, funded, or carried by the Agency is not likely to adversely modify critical habitat. Therefore, only Federal action agencies are directly subject to the specific regulatory requirement (avoiding destruction and adverse modification) imposed by critical habitat designation. Under these circumstances, it is our position that only Federal action agencies will be directly

regulated by this designation. Therefore, because Federal agencies are not small entities, the Service may certify that the proposed critical habitat rule will not have a significant economic impact on a substantial number of small entities.

We acknowledge, however, that in some cases, third-party proponents of the action subject to permitting or funding may participate in a section 7 consultation, and thus may be indirectly affected. We believe it is good policy to assess these impacts if we have sufficient data before us to complete the necessary analysis, whether or not this analysis is strictly required by the RFA. While this regulation does not directly regulate these entities, in our draft economic analysis we will conduct a brief evaluation of the potential number of third parties participating in consultations on an annual basis in order to ensure a more complete examination of the incremental effects of this proposed rule in the context of the RFA.

The economic analysis of the previous proposed designation for the Comal Springs dryopid beetle, Comal Springs riffle beetle, and Peck's cave amphipod examined the potential for conservation efforts for the three species to affect small entities. This analysis was based on the estimated impacts associated with the proposed critical habitat designation and evaluated the potential for economic impacts related to water use for agricultural activities, construction or development, and aquatic restoration. Aquatic restoration activities were not anticipated to affect small entities, as these activities will be carried out by a Federal agency (U.S. Army Corps of Engineers). The economic

analysis for the previous proposed rule for these species determined that the proposed rule was not likely to affect a substantial number of small entities (72 FR 39263, July 17, 2007), and we believe that the effects of this proposed rule will not change the previous determination.

In conclusion, we believe that, based on our interpretation of directly regulated entities under the RFA and relevant case law, this designation of critical habitat will only directly regulate Federal agencies, which are not by definition small business entities. And as such, we certify that, if promulgated, this designation of critical habitat would not have a significant economic impact on a substantial number of small business entities. Therefore, an initial regulatory flexibility analysis is not required. However, though not necessarily required by the RFA, in our draft economic analysis for this proposal we will consider and evaluate the potential effects to third parties that may be involved with consultations with Federal action agencies related to this action.

Energy Supply, Distribution, or Use—Executive Order 13211

Executive Order 13211 (Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use) requires agencies to prepare Statements of Energy Effects when undertaking certain actions. We do not expect the designation of this proposed critical habitat to significantly affect energy supplies, distribution, or use because there are no pipelines, distribution facilities, power grid stations, or other

significant energy facilities within the boundaries of proposed critical habitat. Therefore, this action is not a significant energy action, and no Statement of Energy Effects is required. However, we will further evaluate this issue as we conduct our economic analysis, and review and revise this assessment as warranted.

Unfunded Mandates Reform Act (2 U.S.C. 1501 et seq.)

In accordance with the Unfunded Mandates Reform Act (2 U.S.C. 1501 *et seq.*), we make the following findings:

(1) This rule will not produce a Federal mandate. In general, a Federal mandate is a provision in legislation, statute, or regulation that would impose an enforceable duty upon State, local, or tribal governments, or the private sector, and includes both “Federal intergovernmental mandates” and “Federal private sector mandates.” These terms are defined in 2 U.S.C. 658(5)-(7). “Federal intergovernmental mandate” includes a regulation that “would impose an enforceable duty upon State, local, or tribal governments” with two exceptions. It excludes “a condition of Federal assistance.” It also excludes “a duty arising from participation in a voluntary Federal program,” unless the regulation “relates to a then-existing Federal program under which \$500,000,000 or more is provided annually to State, local, and tribal governments under entitlement authority,” if the provision would “increase the stringency of conditions of assistance” or “place caps upon, or otherwise decrease, the Federal Government’s responsibility to

provide funding,” and the State, local, or tribal governments “lack authority” to adjust accordingly. At the time of enactment, these entitlement programs were: Medicaid; Aid to Families with Dependent Children work programs; Child Nutrition; Food Stamps; Social Services Block Grants; Vocational Rehabilitation State Grants; Foster Care, Adoption Assistance, and Independent Living; Family Support Welfare Services; and Child Support Enforcement. “Federal private sector mandate” includes a regulation that “would impose an enforceable duty upon the private sector, except (i) a condition of Federal assistance or (ii) a duty arising from participation in a voluntary Federal program.”

The designation of critical habitat does not impose a legally binding duty on non-Federal Government entities or private parties. Under the Act, the only regulatory effect is that Federal agencies must ensure that their actions do not destroy or adversely modify critical habitat under section 7. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency. Furthermore, to the extent that non-Federal entities are indirectly impacted because they receive Federal assistance or participate in a voluntary Federal aid program, the Unfunded Mandates Reform Act would not apply, nor would critical habitat shift the costs of the large entitlement programs listed above onto State governments.

(2) We do not believe that this rule will significantly or uniquely affect small governments because the economic analysis for the previous proposed rule for these species determined that the proposed rule was not likely to affect a substantial number of small governments (72 FR 39263, July 17, 2007). Therefore, a Small Government Agency Plan is not required. However, we will further evaluate this issue as we conduct our updated economic analysis, and review and revise this assessment if appropriate.

Takings—Executive Order 12630

In accordance with Executive Order 12630 (Government Actions and Interference with Constitutionally Protected Private Property Rights), we have analyzed the potential takings implications of designating critical habitat for the Comal Springs dryopid beetle, Comal Springs riffle beetle, and Peck's cave amphipod in a takings implications assessment. Critical habitat designation does not affect landowner actions that do not require Federal funding or permits, nor does it preclude development of habitat conservation programs or issuance of incidental take permits to permit actions that do require Federal funding or permits to go forward. The takings implications assessment concludes that this designation of critical habitat for the Comal Springs dryopid beetle, Comal Springs riffle beetle, and Peck's cave amphipod does not pose significant takings implications for lands within or affected by the designation.

Federalism—Executive Order 13132

In accordance with Executive Order 13132 (Federalism), this proposed rule does not have significant Federalism effects. A Federalism summary impact statement is not required. In keeping with Department of the Interior and Department of Commerce policy, we requested information from, and coordinated development of, this proposed critical habitat designation with appropriate State resource agencies in Texas. The designation of critical habitat in areas currently occupied by the the Comal Springs dryopid beetle, Comal Springs riffle beetle, and Peck's cave amphipod may impose nominal additional regulatory restrictions to those currently in place and, therefore, may have a little incremental impact on State and local governments and their activities. The designation may have some benefit to these governments because the areas that contain the physical or biological features essential to the conservation of the species are more clearly defined, and the elements of the features necessary to the conservation of the species are specifically identified. This information does not alter where and what federally sponsored activities may occur. However, it may assist local governments in long-range planning (rather than having them wait for case-by-case section 7 consultations to occur).

Where State and local governments require approval or authorization from a Federal agency for actions that may affect critical habitat, consultation under section 7(a)(2) would be required. While non-Federal entities that receive Federal funding,

assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency.

Civil Justice Reform—Executive Order 12988

In accordance with Executive Order 12988 (Civil Justice Reform), the Office of the Solicitor has determined that the rule does not unduly burden the judicial system and that it meets the requirements of sections 3(a) and 3(b)(2) of the Order. We have proposed designating critical habitat in accordance with the provisions of the Act. This proposed rule uses standard property descriptions and identifies the elements of physical or biological features essential to the conservation of the Comal Springs dryopid beetle, Comal Springs riffle beetle, and Peck's cave amphipod within the designated areas to assist the public in understanding the habitat needs of the species.

Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.)

This rule does not contain any new collections of information that require approval by OMB under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*). This rule will not impose recordkeeping or reporting requirements on State or local governments, individuals, businesses, or organizations. An agency may not conduct or

sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

National Environmental Policy Act (42 U.S.C. 4321 et seq.)

It is our position that, outside the jurisdiction of the U.S. Court of Appeals for the Tenth Circuit, we do not need to prepare environmental analyses pursuant to the National Environmental Policy Act (NEPA; 42 U.S.C. 4321 *et seq.*) in connection with designating critical habitat under the Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244). This position was upheld by the U.S. Court of Appeals for the Ninth Circuit (*Douglas County v. Babbitt*, 48 F.3d 1495 (9th Cir. 1995), cert. denied 516 U.S. 1042 (1996)).

Government-to-Government Relationship with Tribes

In accordance with the President's memorandum of April 29, 1994 (Government-to-Government Relations with Native American Tribal Governments; 59 FR 22951), Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments), and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. In accordance with Secretarial Order 3206 of June 5, 1997 (American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the

Endangered Species Act), we readily acknowledge our responsibilities to work directly with tribes in developing programs for healthy ecosystems, to acknowledge that tribal lands are not subject to the same controls as Federal public lands, to remain sensitive to Indian culture, and to make information available to tribes. We determined that there are no tribal lands that were occupied by the Comal Springs dryopid beetle, Comal Springs riffle beetle, and Peck's cave amphipod at the time of listing that contain the features essential for conservation of the species, and no tribal lands unoccupied by the Comal Springs dryopid beetle, Comal Springs riffle beetle, and Peck's cave amphipod that are essential for the conservation of the species. Therefore, we are not proposing to designate critical habitat for the Comal Springs dryopid beetle, Comal Springs riffle beetle, and Peck's cave amphipod on tribal lands.

Clarity of the Rule

We are required by Executive Orders 12866 and 12988 and by the Presidential Memorandum of June 1, 1998, to write all rules in plain language. This means that each rule we publish must:

- (1) Be logically organized;
- (2) Use the active voice to address readers directly;
- (3) Use clear language rather than jargon;
- (4) Be divided into short sections and sentences; and
- (5) Use lists and tables wherever possible.

If you feel that we have not met these requirements, send us comments by one of the methods listed in the **ADDRESSES** section. To better help us revise the rule, your comments should be as specific as possible. For example, you should tell us the numbers of the sections or paragraphs that are unclearly written, which sections or sentences are too long, the sections where you feel lists or tables would be useful, etc.

References Cited

A complete list of references cited in this rulemaking is available on the Internet at <http://www.regulations.gov> and upon request from the Austin Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Authors

The primary authors of this package are the staff members of the Austin Ecological Services Field Office.

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

Proposed Regulation Promulgation

Accordingly, we propose to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

PART 17—ENDANGERED AND THREATENED WILDLIFE AND PLANTS

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 16 U.S.C. 1531–1544; 16 U.S.C. 4201–4245; Pub. L. 99-625, 100 Stat. 3500; unless otherwise noted.

2. Amend § 17.95 by:

- a. In paragraph (h), revising the critical habitat entry for “Peck’s cave amphipod (*Stygobromus pecki*)”; and

- b. In paragraph (i), revising the critical habitat entries for “Comal Springs dryopid beetle (*Stygoparnus comalensis*)” and “Comal Springs riffle beetle (*Heterelmis comalensis*)”, to read as follows:

§ 17.95 Critical habitat—fish and wildlife.

* * * * *

(h) *Crustaceans*.

* * * * *

Peck's cave amphipod (*Stygobromus pecki*)

(1) Critical habitat units are depicted for this species in Comal County, Texas, on the maps below.

(2) Within these areas, the primary constituent elements of the physical or biological features essential to the conservation of Peck's cave amphipod consist of three components:

(i) Springs, associated streams, and underground spaces immediately inside of or adjacent to springs, seeps, and upwellings that include:

(A) High-quality water with no harmful levels of pollutants such as soaps, detergents, heavy metals, pesticides, fertilizer nutrients, petroleum hydrocarbons, and semivolatile compounds such as industrial cleaning agents; and

(B) Hydrologic regimes similar to the historical pattern of the specific sites, with continuous surface flow from the spring sites and in the subterranean aquifer;

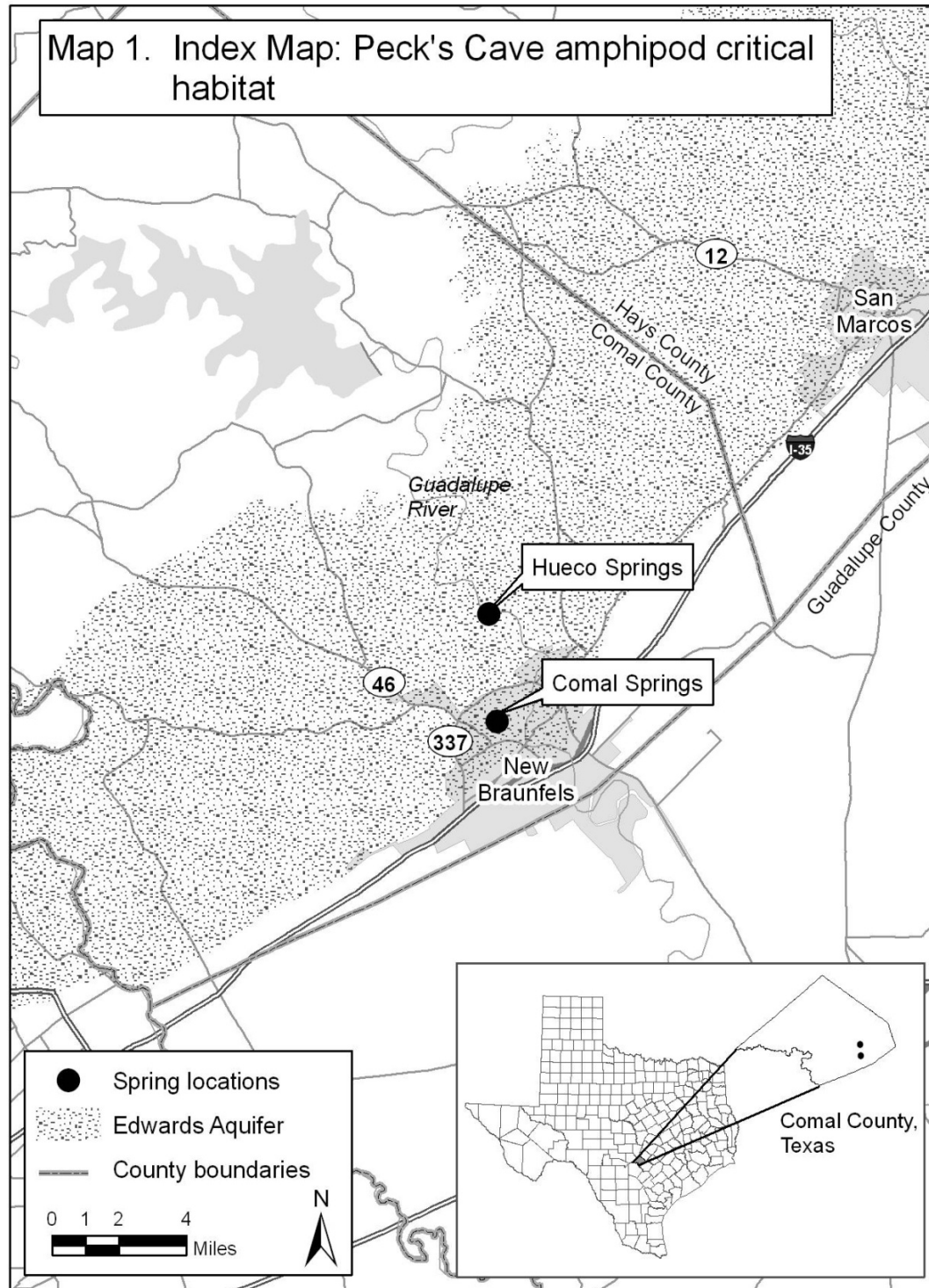
(ii) Spring system water temperatures that range from approximately 68 to 75 °F (20 to 24 °C); and

(iii) Food supply that includes, but is not limited to, detritus (decomposed materials), leaf litter, living plant material, algae, fungi, bacteria, other microorganisms, and decaying roots.

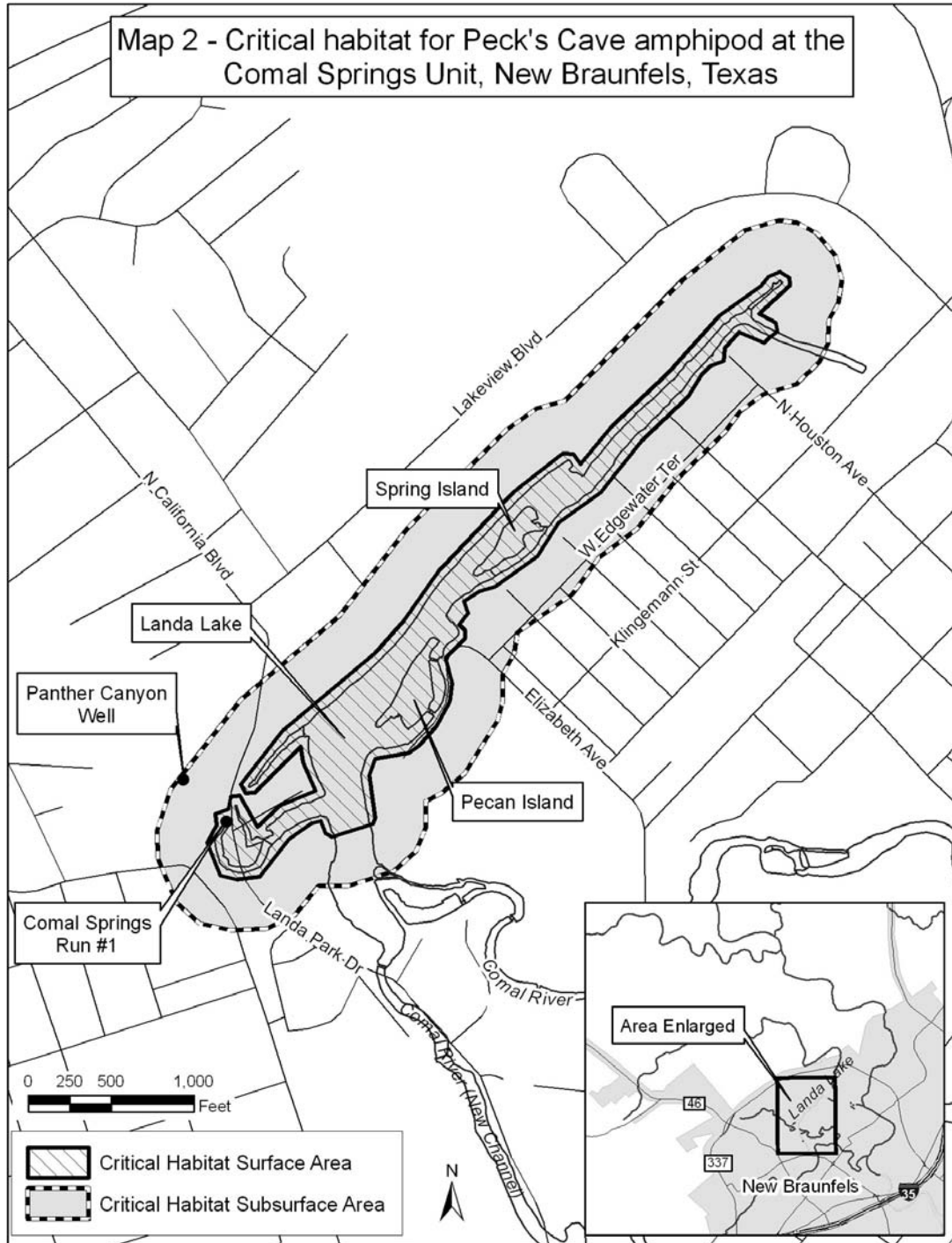
(3) Critical habitat does not include manmade structures (such as buildings, aqueducts, runways, roads, and other paved areas) and the land on which they are located existing on the surface within the legal boundaries on [DATE 30 DAYS AFTER THE DATE OF PUBLICATION OF THE FINAL RULE].

(4) Critical habitat map units. Data layers defining map units were created using geographic information systems (GIS), which included species locations, roads, property boundaries, 2011 aerial photography, and USGS 7.5' quadrangles. Points were placed in the GIS. The maps in this entry, as modified by any accompanying regulatory text, establish the boundaries of the critical habitat designation. The coordinates or plot points or both on which each map is based are available to the public at the Service's internet site, (<http://www.fws.gov/southwest/es/austintexas/>), <http://www.regulations.gov> at Docket No. FWS-R2-ES-2012-0082, and at the field office responsible for this critical habitat designation. You may obtain field office location information by contacting one of the Service regional offices, the addresses of which are listed at 50 CFR 2.2.

(5) Note: An index map of the critical habitat units for the Peck's cave amphipod, a map of the Comal Springs unit, and a map of the Hueco Springs unit follow:

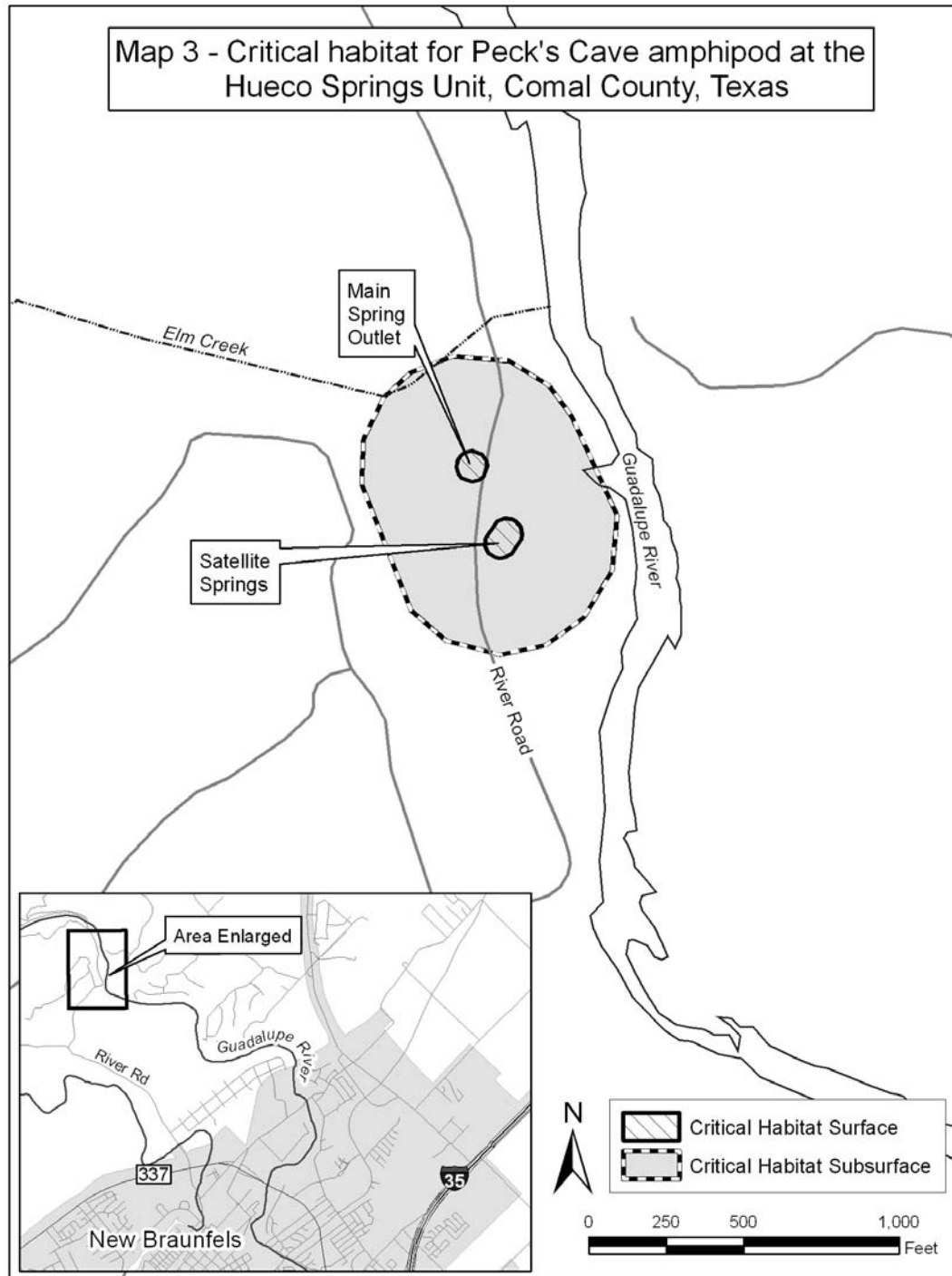


(6) Unit 1: Comal Springs Unit, Comal County, Texas. Map of the Comal Springs Unit follows:



(7) Unit 2: Hueco Springs Unit, Comal County, Texas. Map of the Hueco Springs

Unit follows:



(i) *Insects.*

* * * * *

Comal Springs dryopid beetle (*Stygoparnus comalensis*)

(1) Critical habitat units are depicted for this species in Comal and Hays Counties, Texas, on the maps below.

(2) Within these areas, the primary constituent elements of the physical or biological features essential to the Comal Springs dryopid beetle consist of these components:

(i) Springs, associated streams, and underground spaces immediately inside of or adjacent to springs, seeps, and upwellings that include:

(A) High-quality water with no harmful levels of pollutants such as soaps, detergents, heavy metals, pesticides, fertilizer nutrients, petroleum hydrocarbons, and semivolatile compounds such as industrial cleaning agents; and

(B) Hydrologic regimes similar to the historical pattern of the specific sites, with continuous surface flow from the spring sites and in the subterranean aquifer;

(ii) Spring system water temperatures that range from approximately 68 to 75 °F (20 to 24 °C); and

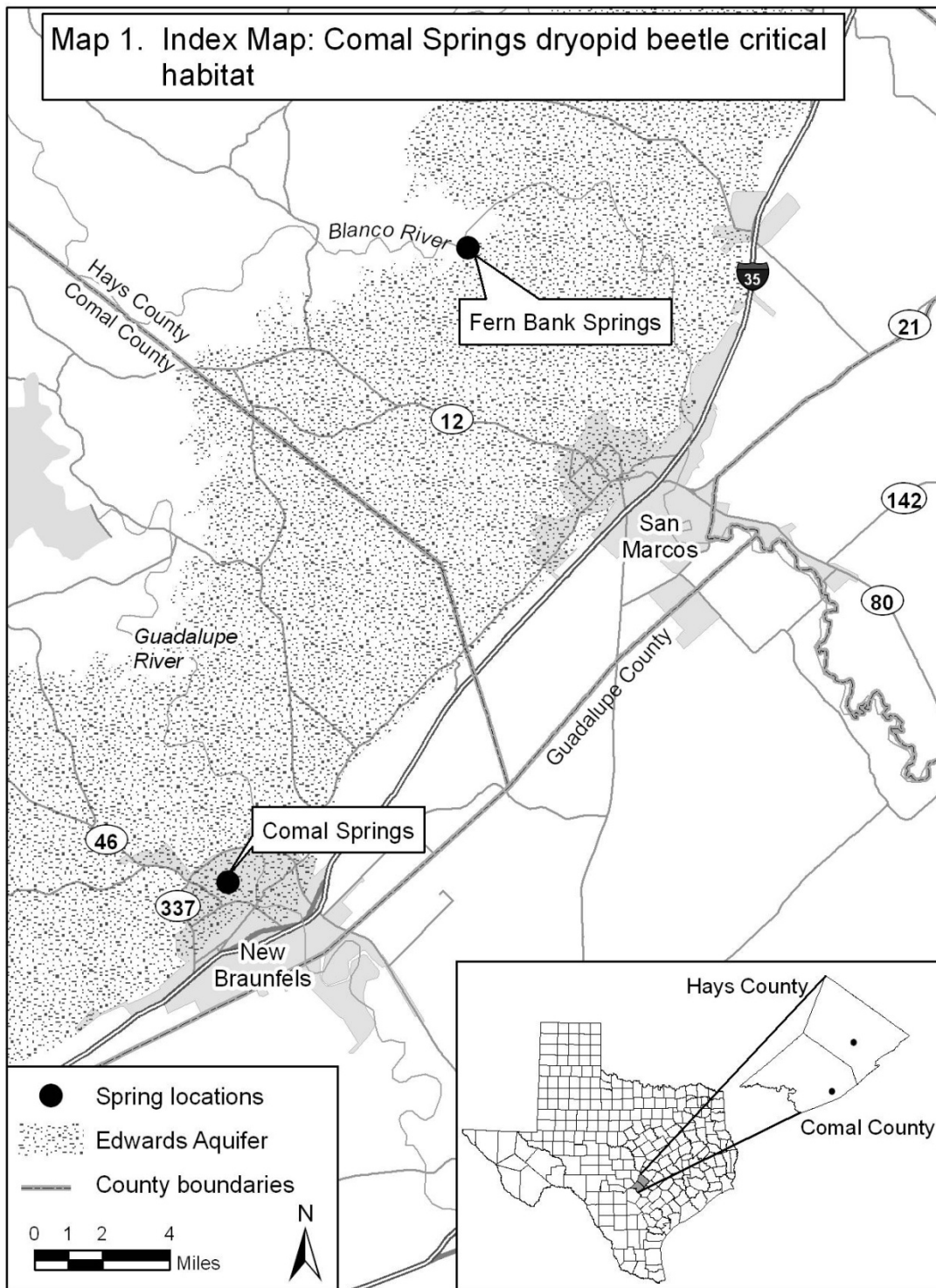
(iii) Food supply that includes, but is not limited to, detritus (decomposed materials), leaf litter, living plant material, algae, fungi, bacteria, other microorganisms, and decaying roots.

(3) Critical habitat does not include manmade structures (such as buildings, aqueducts, runways, roads, and other paved areas) and the land on which they are located existing on the surface within the legal boundaries on [DATE 30 DAYS AFTER THE DATE OF PUBLICATION OF THE FINAL RULE].

(4) Critical habitat map units. Data layers defining map units were created using geographic information systems (GIS), which included species locations, roads, property boundaries, 2011 aerial photography, and USGS 7.5' quadrangles. Points were placed in the GIS. The maps in this entry, as modified by any accompanying regulatory text, establish the boundaries of the critical habitat designation. The coordinates or plot points or both on which each map is based are available to the public at the Service's internet site, (<http://www.fws.gov/southwest/es/austintexas/>), <http://www.regulations.gov> at Docket No. FWS-R2-ES-2012-0082, and at the field office responsible for this critical habitat designation. You may obtain field office location information by contacting one of the Service regional offices, the addresses of which are listed at 50 CFR 2.2.

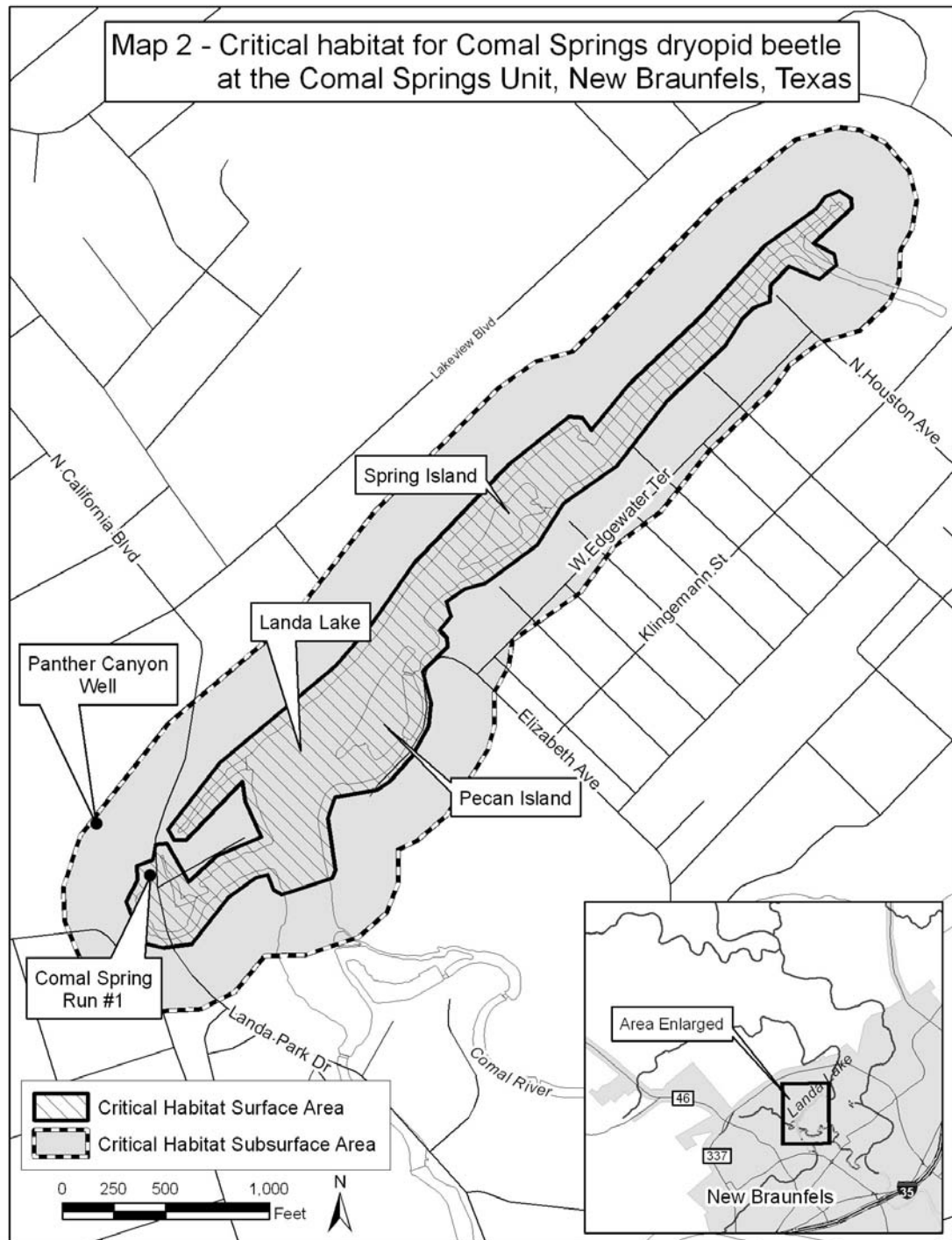
(5) Note: An index map of the critical habitat units for the Comal Springs dryopid beetle, a map of the Comal Springs unit, and a map of the Fern Bank Springs unit

follow:

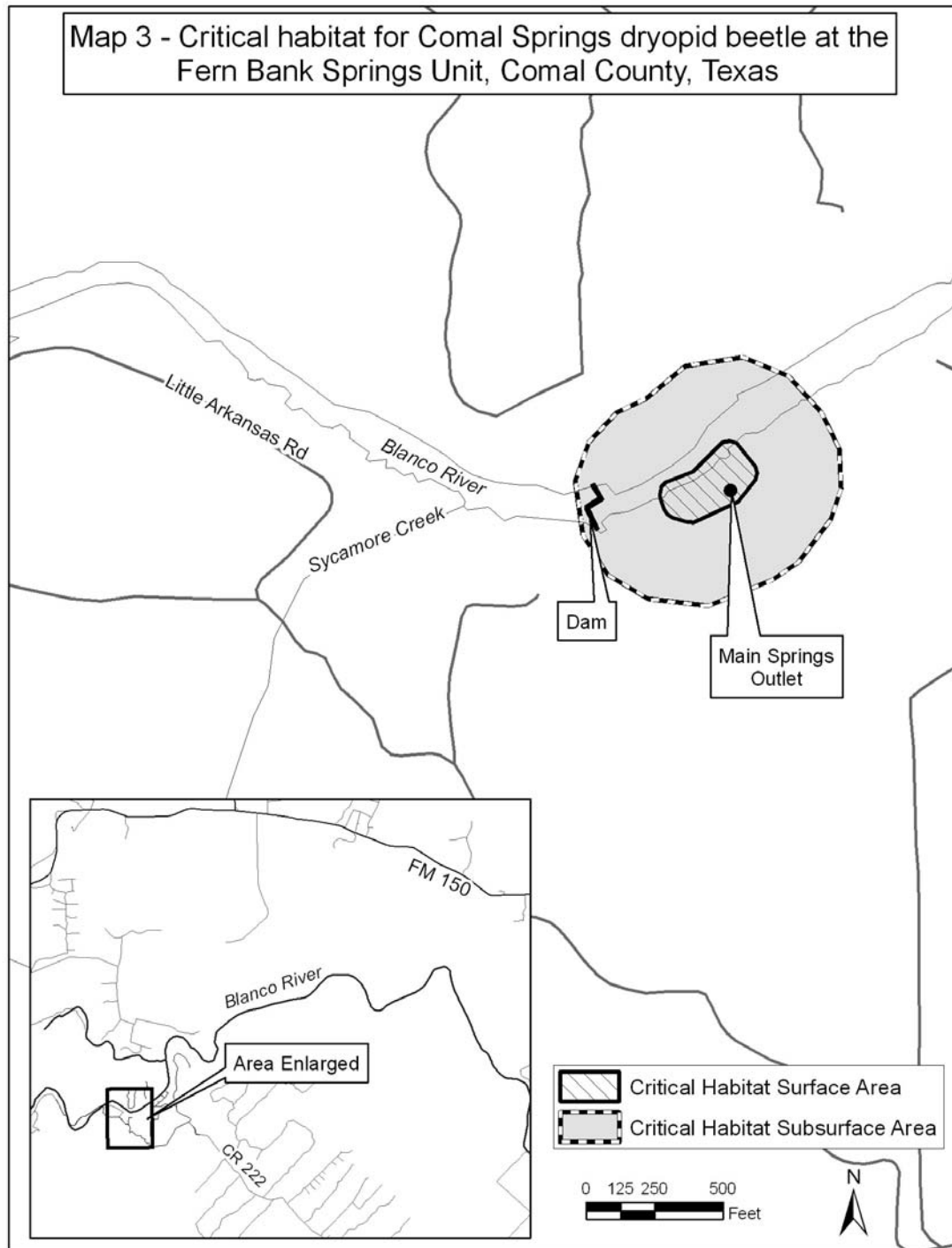


(6) Unit 1: Comal Springs Unit, Comal County, Texas. Map of the Comal Springs

Unit follows:



(7) Unit 3: Fern Bank Springs Unit, Hays County, Texas. Map of the Fern Bank Springs Unit follows:



Comal Springs riffle beetle (*Heterelmis comalensis*)

(1) Critical habitat units are depicted for this species in Comal and Hays Counties, Texas, on the maps below.

(2) Within these areas, the primary constituent elements of the physical or biological features essential to the Comal Springs dryopid beetle consist of these components:

(i) Springs, associated streams, and underground spaces immediately inside of or adjacent to springs, seeps, and upwellings that include:

(A) High-quality water with no harmful levels of pollutants such as soaps, detergents, heavy metals, pesticides, fertilizer nutrients, petroleum hydrocarbons, and semivolatile compounds such as industrial cleaning agents; and

(B) Hydrologic regimes similar to the historical pattern of the specific sites, with continuous surface flow from the spring sites and in the subterranean aquifer;

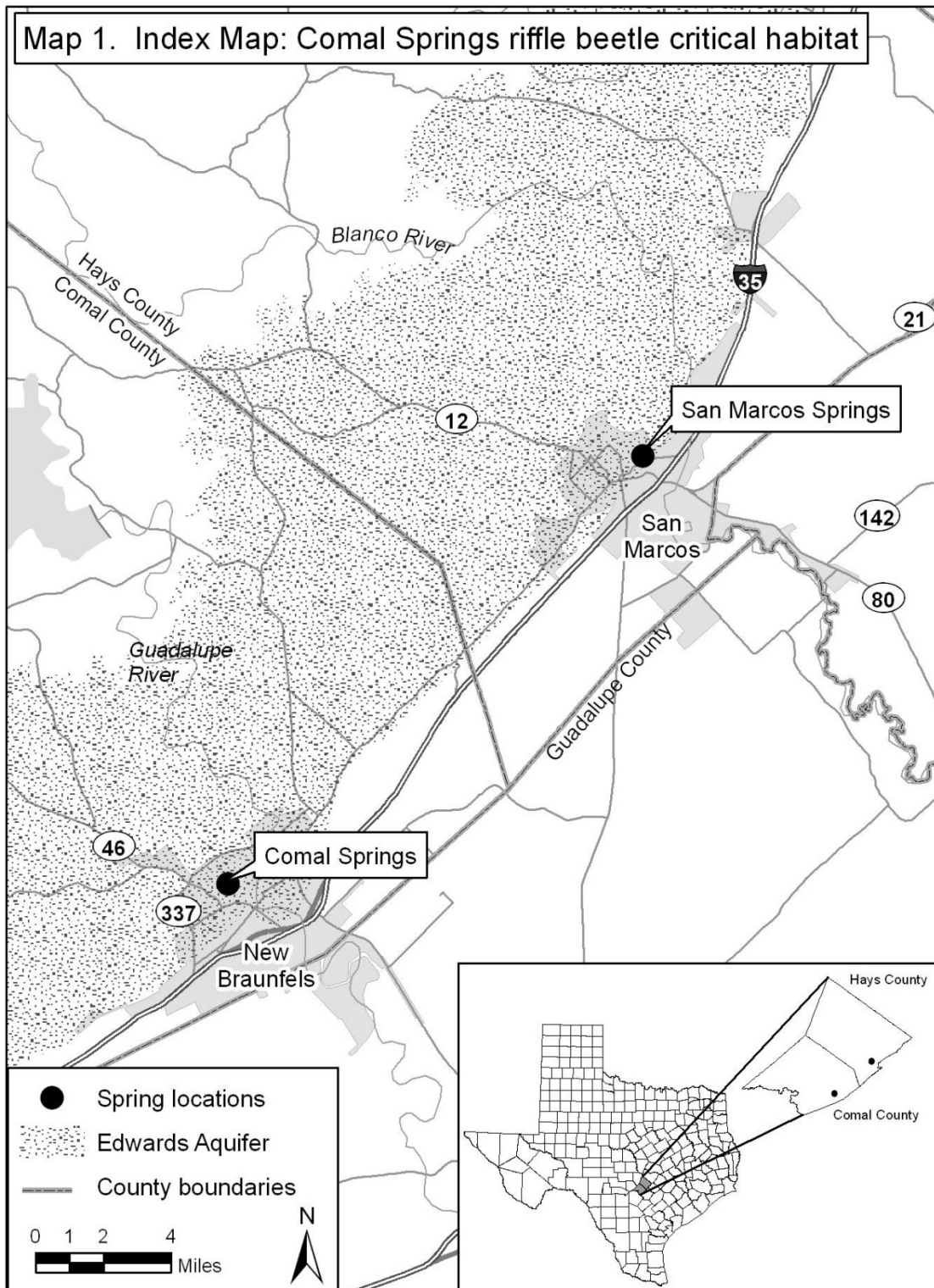
(ii) Spring system water temperatures that range from approximately 68 to 75 °F (20 to 24 °C); and

(iii) Food supply that includes, but is not limited to, detritus (decomposed materials), leaf litter, living plant material, algae, fungi, bacteria, other microorganisms, and decaying roots.

(3) Critical habitat does not include manmade structures (such as buildings, aqueducts, runways, roads, and other paved areas) and the land on which they are located existing on the surface within the legal boundaries on [DATE 30 DAYS AFTER THE DATE OF PUBLICATION OF THE FINAL RULE].

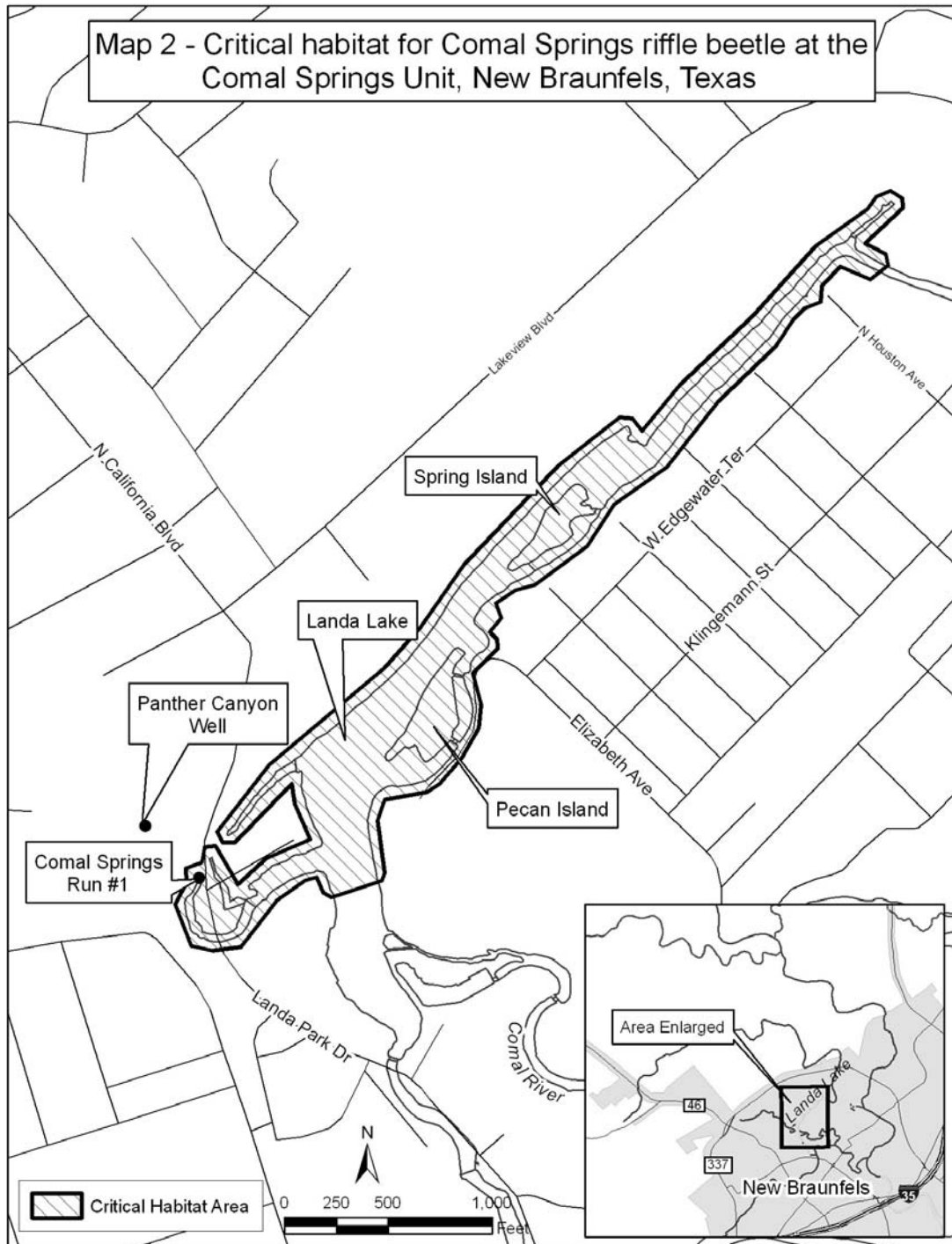
(4) Critical habitat map units. Data layers defining map units were created using geographic information systems (GIS), which included species locations, roads, property boundaries, 2011 aerial photography, and USGS 7.5' quadrangles. Points were placed on the GIS. The maps in this entry, as modified by any accompanying regulatory text, establish the boundaries of the critical habitat designation. The coordinates or plot points or both on which each map is based are available to the public at the Service's internet site, (<http://www.fws.gov/southwest/es/austintexas/>), <http://www.regulations.gov> at Docket No. FWS-R2-ES-2012-0082, and at the field office responsible for this critical habitat designation. You may obtain field office location information by contacting one of the Service regional offices, the addresses of which are listed at 50 CFR 2.2.

(5) Note: An index map of critical habitat units for the Comal Springs riffle beetle, a map of the Comal Springs unit, and a map of the San Marcos Springs unit follow:



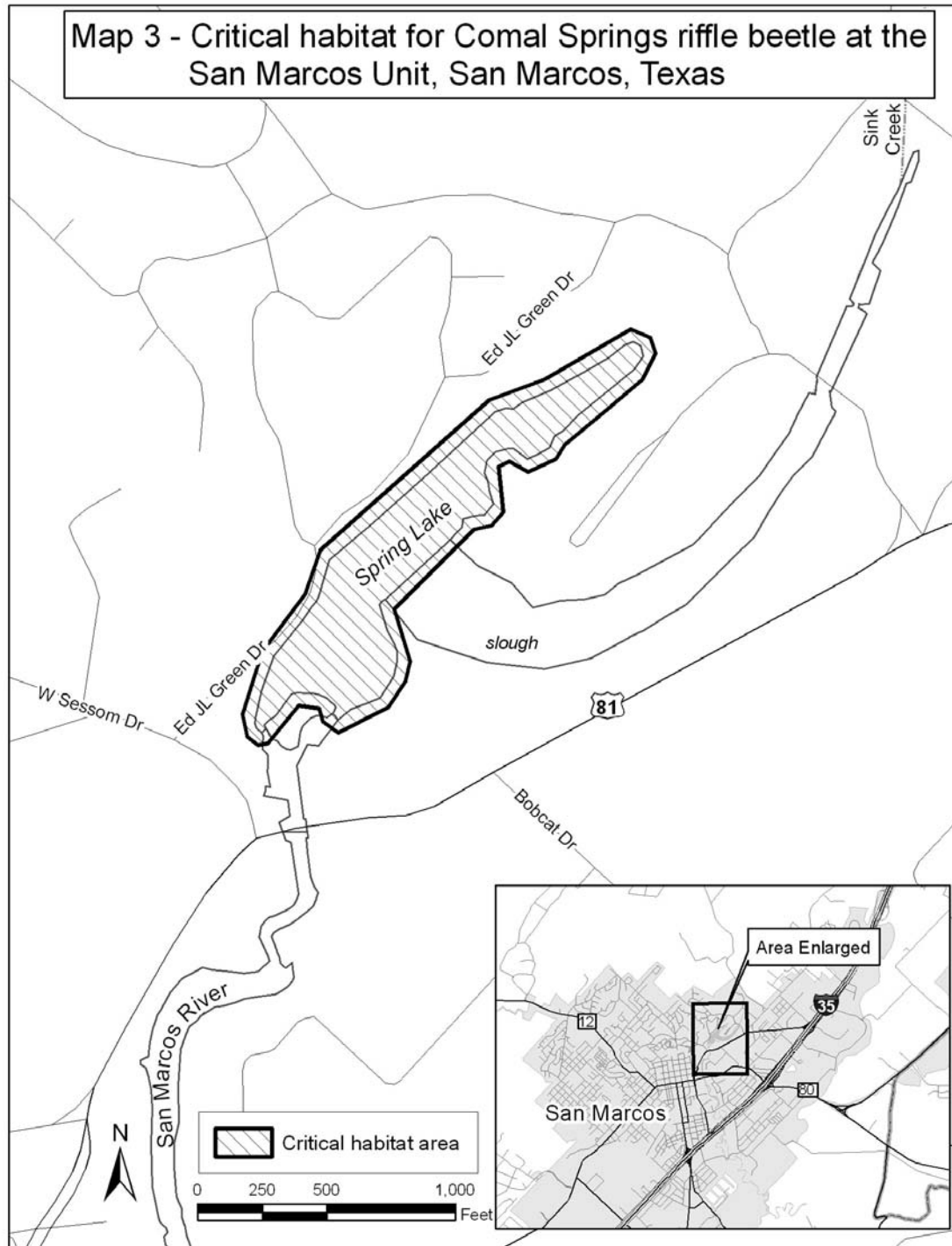
(6) Unit 1: Comal Springs Unit, Comal County, Texas. Map of Comal Springs

Unit, follows:



(7) Unit 4: San Marcos Springs Unit, Hays County, Texas. Map of San Marcos

Springs Unit, follows:



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Dated: October 5, 2012

/s/ Eileen Sobeck

Deputy Assistant Secretary for Fish and Wildlife and Parks

Billing Code 4310-55-P